The Dissertation Committee for Kimberly Rose Huyser certifies that this is the approved version of the following dissertation:

Psychological Distress Among Two American Indian Tribes

Committee:

Ronald J. Angel, Supervisor

Robert A. Hummer

Catherine E. Ross

Arthur Sakamoto

James Cox

Janette Beals

Psychological Distress Among Two American Indian Tribes

by

Kimberly Rose Huyser, M.A., B.A.

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Dedication

To the Author, Creator, and Healer of All Things

&

In Memory of Ethel Kellywood

&

To my life partner, Jo

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Psychological Distress Among Two American Indian Tribes

Kimberly Rose Huyser, Ph.D.

The University of Texas at Austin, 2010

Supervisor: Ronald J. Angel

American Indians suffer disproportionately from mental disorders such as depression and substance abuse. American Indians have lower socioeconomic status than white Americans making them more vulnerable to mental health stressors and disorders, such as depression. Unfortunately, the causal processes and mechanisms producing negative psychological outcomes remain unclear. Despite the disadvantages faced by many American Indians, the Native American community offers cultural norms and values that facilitate treatment of and recovery from mental stressors. The Native American community offers its members an extended social support network as well as healing ceremonies, which could mitigate the effects of depression. In my dissertation, I compare the level of psychological distress between two tribal populations from a study from the Centers for American Indian and Alaska Native Health (CAIANH) at the University of Colorado at Denver. I use logistic regression to examine the relationship between the psychological distress score and tribal identity. The logistic regression analysis also explores the relationship between self-rated health and socioeconomic attainment. Finally, I compare the outcomes between the Northern Plains tribe and the Southwest tribe. The results suggest that individuals with a strong sense of cultural spirituality have lower psychological distress than individuals who do not have strong cultural spirituality. Also, individuals of the Southwest tribe who spent part of their lives

off the reservation or near the reservation experience lower psychological distress compared to those who spent their entire lives on the reservation; in contrast, individuals of the Northern Plains tribe are disadvantaged in terms of mental health if they spent part of their lives off or near the reservations than those who stay on the reservation their whole lives. Members of either the Northern Plains tribe or Southwest tribe who feel socially isolated are very likely to experience severe psychological distress or rate their health poorly. The findings of the study indicate that resiliency factors among the tribes such as cultural-spirituality, reservation community and social support are protective, but the findings also encourage further understanding of mechanisms and utilization of the resources available.

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Chapter 1: Introduction

> *The first Americans - the [American] Indians - are the most deprived and most isolated minority group in our nation. On virtually very scale of measurement: employment, income, education, health - the condition of the Indian people ranks at the bottom…The story of the [American] Indian is something more than the record of the white man's frequent aggression, broken agreements, intermittent remorse and prolonged failure. It is a record also of endurance, of survival, of adaptation and creativity in the face of overwhelming obstacles. It is a record of enormous contributions to this country – to its art and culture, to its strength and spirit, to its sense of history and its sense of purpose.*
>
> (Richard M. Nixon, 1970)

It has been nearly forty years since President Nixon spoke these words before Congress in a special message on Indian Affairs (Prucha, 2000). Despite this length of time, much of Nixon's reflections continue to ring true and much remains to be learned from Native Americans[1] regarding resilience, endurance, and survival at both the individual and group level.

The social processes and psychological mechanisms of resilience, endurance, and survival of American Indian people in the face of systematic social, political, and economic disadvantage are only recently starting to be explored and understood by social scientists. Despite the disadvantages faced by many American Indians, the Native American community offers cultural norms and values that facilitate treatment and recovery from mental stressors. The Native American community offers its members an extended social support network and a unique cultural spirituality system, such as healing ceremonies, which could mitigate the effects of depression and anxiety. In my

[1] I use the terms "Native American" and "American Indian" interchangeably. Navajo Nation President Joe Shirley, Jr. only uses the English term, Native American, because no indigenous language has a translation for "American Indian" (personal communication with author). Also, in a survey, indigenous individuals slightly prefer the term, "American Indian" (Farley, 1996, p. 212).

dissertation, I am interested in answering the following questions. How have historical marginalization and systematic genocide undermined the autonomy and identity of Native Americans to increase their vulnerability to physical and mental illness? What factors increase individual resilience in light of the systematic destruction of this culture? What are the predictors of depression and anxiety?

In addition to their current social status, American Indians have a unique relationship with the United States' history that must also be understood and considered when examining the mental health of Native American peoples. Since the early 1800s, American Indian tribes have been considered domestic dependent nations in which Native Americans were citizens of their tribe but not citizens of the United States. American Indians did not become citizens of the United States until 1924. Since the United States has a long history of defining and redefining American Indian tribes and peoples, Native American people have also been subject to misrecognition by both the United States government and its citizens. The misrecognition stems from the United States not extending American Indian tribes the authority to determine their identity, land ownership, or self-governing sovereignty.

I will be examining the effects of the historical misrecognition of American Indians by examining the current psychological profile of two American Indian tribes. In this first chapter, I will provide a summary of my theoretical foundation followed by a brief overview of American Indian history and finally, a description of the current status of Native Americans in terms of health, mental health, and socioeconcomic status. I will conclude with an outline of the succeeding chapters in my investigation of misrecognition and psychological health of American Indians.

Misrecognition

American Indian tribes, unlike any other racial or ethnic minority in the United States, are recognized as distinctive, sovereign nations in the United States Constitution. The nation's founding social contract prescribed separate rights and entitlements that were negotiated in treaties with U.S. federal and state governments. Thus, tribal and reservation lands continue to represent not only legal jurisdictions but are valued and tangible territorial symbols of the resilient Native American identities embodied in Native American communities. Despite the varied and lengthy influence of white populations on Native American generations spanning a half a millennium, a large number of American Indians today continue to maintain a strong and enduring sense of racial and ethnic identity. The positive and affirming recognition of American Indians is an important part of developing the identity and respect of American Indian individuals. Without this honor and respect, American Indians, both as individuals and a group, are more vulnerable to injustice and self-hatred (Kymlicka, 1996; Taylor, 1992).

Charles Taylor, in *Multiculturalism and* "*The Politics of Recognition"* (1992), argues that individual and group identity is partly shaped by recognition or its absence. The misrecognition of person or group can lead to a confining or demeaning picture of the person or group and it can cause real damage and real distortion to the group's self-image. Without proper recognition of the group and individual, the individual can experience a form of oppression in which a false identity is pressed upon them by the surrounding society (Taylor, 1992). Taylor notes that indigenous and colonized people in general have experienced and are experiencing misrecognition. Since 1492, Europeans have projected an inferior and "uncivilized" image on indigenous and colonized people

and through the force of conquest have been able to impose this image on them (Taylor, 1992). The misrecognition of the group's self-identity can inflict a "grievous wound and thus saddling its victims with a crippling self-hatred" (Taylor, 1992, p. 25).

Since misrecognition can cause severe harm to the group identity and individuals, Taylor argues that recognition is a vital human need. The importance of recognition has been acknowledged for the individual but not fully for the social or group level. The politics of equal recognition continues to develop its understanding of the importance of recognition of the group (Taylor, 1992).

The struggle for democratic governments is to adequately recognize and differentiate the identity of its members without infringing on any person's or group's human rights. Kymlicka (1996) argues that liberal democracies can and should recognize group members in addition to protecting human rights. Kymlicka argues that it is important to distinguish national minorities, who are distinct and potentially self-governing groups and can be incorporated into a larger state. National minorities often demand some form of political autonomy or territorial jurisdiction, so as to ensure the full and free development of their cultures and protect the best interests of their people (Kymlicka, 1996).

Kymlicka argues that national minorities such as American Indians should be given self-government with self-determination. Within self-government, it should provide protection for language rights, land claims, an asymmetric distribution of powers, and the redrawing of political boundaries. Through providing self-government and group specific rights, it provides the U.S. government one way to promote equality between the minority and the majority.

I conceptualize the psychological impact of misrecognition as demoralization. Demoralization describes nonspecific psychological distress that people experience and believe is beyond their control (Dohrenwend et al., 1980; Rickelman, 2002). It can be experienced much like depression, but it is not a clinical diagnosis. Since demoralization is not a clinical diagnosis, it is understood as a more general experience of psychological distress. As part of a response to nonspecific psychological distress, Rickelman (2002) suggests a theoretical link between demoralization and a continuum of depressogenic responses individuals may have to life situations. Frank (1984) describes a person who is demoralized as one who feels helpless or hopeless, has a sense of personal incompetence or failure, and feels socially isolated. Drawing on Frank's conceptualization of a demoralized person, I expand the conceptualization to a person who does not have high expectations for the future. Moreover, I argue this expanded conceptualization can also be applied to the group. The group would have experienced the repeated removal of their authority to determine the future of their culture, language, and overall survival.

Brief Overview of American Indian History

During the first approximately two hundred years of contact, Native Americans and European settlers were involved in trading items. European settlers brought knives, guns, and horses and Native Americans exchanged agricultural tips and produce including corn and potatoes. In addition to material exchange between the Native American peoples and the European settlers, there was also intellectual exchange. The Iroquis Confederacy of Nations's Great Law of Peace contributed to the United States Constitution.

1830

The growth of the American Indian population has always been met with adversity. In 1830, President Andrew Jackson enacted the Indian Removal Act, which forcibly resettled all American Indian tribes west of the Mississippi River (Deloria, 1985; Prucha, 2000). This forcible resettlement placed American Indian tribes in geographical regions unfamiliar to them and lacking the geographical and environmental characteristics the tribes would have otherwise chosen. As Native Americans were pushed westward, the development of the United States continued to compromise the health and well-being of American Indians tribes. The increasing flow of settlers to California and Oregon brought cholera, smallpox and measles to the tribes (Prucha, 2000; Shoemaker, 1999; Snipp, 1989). The fur trade and General Sheridan of the U.S. army promoted the killing of buffalo, which destroyed a vital component of the many Native American tribes' cultural practices and physical survival.

1879

In 1879, the Carlisle Indian School was founded as the first off-reservation boarding school for American Indian children (Brophy and Aberle, 1972). It also became the model for the nation's boarding school system for Native American children. Within the boarding schools, the children were not allowed to speak their native language or keep any of their customs. In addition to this, each child's hair was cut, they were given a Western name, and the students were dressed in Western clothes (Nichols, 1986). The children were allowed to visit their parents or families only a few times a year. At school, the children were given vocational training geared toward service professions, such as housekeeping and maintenance (Brophy and Aberle, 1972; Nichols, 1986). The boarding school experience was focused on replacing the American Indian children's traditional

culture with the dominant Western culture and language. Individual identity is shaped and developed by one's culture and the boarding school's aggressive attempt at changing American Indian culture and identity is an explicit example of misrecognition and the removal of authority from the American Indian people.

1924

Following World War I, and influenced by the high military participation of American Indians in the armed forces, the Indian Citizenship Act was passed in 1924 (Prucha, 2000). Before this legislation, American Indians were citizens of their tribe and wards of the United States government; thus, tribes were a stigmatized group and Native American individuals were not legally recognized as U.S. citizens. The 1924 Act allowed tribal members to have a dual citizenship, granting full U.S. citizenship but stating, “such status does not infringe upon the rights to tribal and other property that Indians enjoy as members of their tribes" (Deloria and Lytle, 1998, p. 3). In the language of the Act, Indians were not to lose their U.S. civil rights because of tribal citizenship nor were they to lose their tribal rights because of their American citizenship.

1950s

Despite the Indian Citizenship Act declaring that American Indians had dual citizenship, the sovereignty of each of the tribes continued to be under threat. Throughout the 1950s, the U.S. government developed an Indian Termination Policy under which the U.S. government terminated the recognition of sovereignty of tribes, the trusteeship relationship with American Indian reservations, and ended the exclusion of American Indians from state laws (Brophy and Aberle, 1972; Deloria, 1988). Over this time period, Congress terminated services to over 60 tribes across the country. The perspective of the

termination policy was to aid in the assimilation of American Indians into mainstream American life. Within the termination policy, the Bureau of Indian Affairs had a relocation program, which moved tribal members from the reservation into urban areas (Brophy and Aberle, 1972; Nabokov, 1999). It is has been estimated that approximately 35,000 American Indians were relocated to urban areas by 1960 (Nabokov, 1999; Porter and Roemer, 2005).

1968

It took until 1968, with the passage of Title II of the Civil Rights Act, that those individuals living under tribal governments were given protection under the Bill of Rights (Deloria and Lytle, 1998). Also in 1968, the American Indian Movement (AIM) was founded to help advocate for the rights and needs of Native American people and protest destructive governmental policies (Deloria and Salisbury, 2004). AIM helped fight for the urban American Indians to be served with social services and raised awareness against police harassment of urban American Indians. On July 8, 1970, President Richard Nixon ended the policy of termination of American Indian tribes in his special message on Indian Affairs to Congress (Deloria and Salisbury, 2004; Prucha, 2000). Since 1975, the U.S. government has used a self-determination policy toward American Indian tribes, which allows tribes to make decisions regarding their welfare (Deloria and Salisbury, 2004; Prucha, 2000).

Table 1. United States Population 1492—2000

Year	Total population	Percent	American Indian, Eskimo, and Aleut	Percent
NUMBER				
2000[1]	281,421,906	100.0	4,119,301	1.5
2000[2]	281,421,906	100.0	2,475,956	0.9
1990	248,709,873	100.0	1,959,234	0.8
1980	226,545,805	100.0	1,420,400	0.6
1970	203,211,926	100.0	827,255	0.4
1960	179,323,175	100.0	551,669	0.3
1950	150,697,361	100.0	343,410	0.2
1940	131,669,275	100.0	333,969	0.3
1930	122,775,046	100.0	332,397	0.3
1920	105,710,620	100.0	244,437	0.2
1910	91,972,266	100.0	265,683	0.3
1900	75,994,575	100.0	237,196	0.3
1890	62,947,714	100.0	248,253	0.4
1880	50,155,783	100.0	66,407	0.1
1870	38,558,371	100.0	25,731	0.1
1860	31,443,321	100.0	44,021	0.1
1850	23,191,876	100.0	(NA)	(NA)
1840	17,063,353	100.0	(NA)	(NA)
1830	12,860,702	100.0	(NA)	(NA)
1820	9,638,453	100.0	(NA)	(NA)
1810	7,239,881	100.0	(NA)	(NA)
1800	5,308,483	100.0	(NA)	(NA)
1790	3,929,214	100.0	(NA)	(NA)
1492[3]	(NA)	(NA)	1,152,950	(NA)
1492[4]	(NA)	(NA)	3,500,000	(NA)
1492[5]	(NA)	(NA)	5,130,000	(NA)
1492[6]	(NA)	(NA)	18,000,000	(NA)

Footnotes:

[1] Race or Ethnic Group alone or in combination with one or more other races

[2] Race or Ethnic Group alone

[3] 1928 James Mooney estimate of North American aborginal population at the time of European contact

[4] 1969 Harold E. Driver estimate, which modified the 1966 Henry F. Dobyns estimate

[5] 1981 Russell Thorntion and Joan Marsh-Thornton estimate by adjusting the Dobyns data

[6] 1984 Henry F. Dobyns estimate after additional reviews of a variety of documentary and archaelogical data

- Rounds to 0.0. (NA) Not available.

Source: U.S. Census Bureau, Snipp 1980

American Indians in the United States

Before the arrival of European explorers in 1492, it is estimated that North American aboriginal population was between 2.2 million[2] and 18 million[3] people (Snipp, 1989). Unfortunately due to war and disease, the Native American population has dwindled (Thornton, 1987). Four hundred years later in the United States Census (1890), the government reported 248,253 American Indians in the population. Thankfully, the American Indian population has continued to grow due to population perseverance and improved healthcare (Shoemaker, 1999; Young, 1997), and the 2000 Census reported 4,119,301 American Indians, including individuals who have multiracial identities.

Native American populations were the first groups to permanently occupy the North American continent. Table 1 lists the size of the general population compared to the American Indian population from 1492 through 2000. Estimates of the population size in 1492 range from 18,000,000 to 1,152,950 people; however, the generally accepted population size for this period is around 5,130,000 people. Regardless of the actual numbers, disease and genocide following contact with Europeans caused a severe drop in the American Indian population, which was reduced to a mere 26,000 by 1870. The declining population trend was reversed in the post-Civil War period—a trend that continued and grew in succeeding decades. Exponential growth in American Indian population rates over time has pushed the population higher than 4 million as of 2000. Following the 1960 Census, the American Indian population has a grown at a rate that

[2] 1959 Homer Aschmann, *The Central Desert of Baja California: Demography and Ecology* (Riverside, CA: Manessier, 1967 [1959])

[3] 1984 Henry F. Dobyn's estimate of North American aboriginal population after reviewing a variety of documentary and archaeological data. Henry F. Dobyns, *Their Number Become Thinned: Native American Population Dynamics in Eastern North America* (Knoxville: Univ of Tennessee Press, 1983).

exceeds natural increase. The high growth rates can largely be attributed to two important changes. First, the Census Bureau changed how it collects racial information. Prior to 1960 Census, the Census enumerator filled out the questionnaire in individual households and ascribed a racial identification to the household (Eschbach, 1993; Snipp, 1989). After the 1960 Census, the head of household described the household characteristics in a private mail-in questionnaire. The new method allowed respondents to choose their own racial identity and thus, enabled the Census to capture the second important change—shifting self-identifications. The other major reason for the exponential growth of American Indians in the Census is that individuals have changed their racial identity from white to American Indian at some point during their adulthood (Eschbach, 1993; Eschbach, Supple, and Snipp, 1998; Passel, 1997; Snipp, 1989). The changes in the Census enumeration methods have also affected the aggregated population count for each tribe.

Racial Identification

Native American racial identity is complicated by many generations of racial intermarriage. The significance of changing patterns of racial identity in affecting the population growth of American Indians is demonstrated by Eschbach (1993), Eschbach, Supple and Snipp (1998), and Passel (1997). A major portion of the increase in the Native American population since 1960 was due to persons changing their racial identification to Native American (since the immigration of Native Americans from other countries is tiny). Consistent with that explanation, Thornton (1997) investigates the differing enumerations of the Native American population based on the Census versus tribal enrollment data and finds that a large proportion of those identifying as Native

American in the Census are not included in the official enrollment records maintained by Native American tribes. Research has illustrated the drastic changes in racial identification among Native Americans over the past decades, but the relationship of racial identity and mental health is only beginning to be explored. Campbell and Eggerling-Boeck (2006) explored the psychological well-being of multiracial adolescents and found that adolescents with American Indian and white heritage were significantly more likely to experience depression or thoughts of suicide. Unfortunately, it is unclear what is driving the negative psychological outcomes.

Tribal and reservation lands continue to represent not only legal jurisdictions but are valued and tangible territorial symbols of the resilient Native American identities embodied in Native American communities. American Indians, both as individuals and a group, are more vulnerable to injustice and self-hatred (Kymlicka, 1996; Taylor, 1992). To best understand the role of recognition and demoralization in shaping Native American self-understandings and identity, it is necessary to explore changes in Native American's population and status.

Health Issues

Health Care

It is often assumed that American Indian people utilize the Indian Health Service for their health care needs. Unfortunately, the Indian Health Service generally operates primarily in tribal areas and in remote areas of the tribal lands, which means it serves approximately 57% of American Indians and Alaskan Natives (Indian Health Service, 2006). Even with Indian Health Service care, American Indians have three times the uninsured rate of whites (Brown et al., 2000). While American Indians living on

reservations and tribal members do have access to reservation health facilities (which make up the Indian Health Service), unfortunately access to health care is still a problem because there is a limited number of facilities and services available for individuals with long-term care needs (U.S. Department of Health and Human Services Public Health, 1990). Many Native Americans who live in rural areas have limited access to physicians and live where the Indian Health Service may not provide health care services. These individuals have about half the national average rate of access to healthcare (U.S. Department of Health and Human Services Public Health, 1990).

Lack of adequate rehabilitation, maintenance therapies, and personal assistance increases the risk of secondary health problems among American Indians (U.S. Department of Health and Human Services Public Health, 1990). Other factors include nutritional disorders, alcohol and drug abuse, inadequate personal hygiene, and acute and chronic illnesses (U.S. Department of Health and Human Services Public Health, 1990). Cardiovascular disorders and stroke are brought on by hypertension, nutritional problems, smoking, and lack of physical activity.

The government recognizes 564 tribal entities eligible for funding from the Bureau of Indian Affairs (Federal Register, 2009) and there are currently 70 state-recognized tribes that do not qualify for federal funding. The current Census relies on self-identified racial and ethnic categories by allowing individuals to write-in their specific tribal affiliation. Tribal self-identification does not have to follow federally recognized tribal identification. Table 2 describes the 25 largest tribal groups claimed on the Census and shows tribal population change since the 1980 Census. The five largest tribal groups are Cherokee, Navajo, Sioux, Chippewa, and Choctaw. According to the

2000 Census, the number of Cherokee single race individuals is 281,069 and the number of Cherokee individuals of single race alone or in combination with any other group is 729,533. The number of Navajo single race individuals is 269,202 and the number of Navajo individuals of single race alone or in combination with any other group is 298,197. The number of Sioux single race individuals is 108,272 and the number of Sioux individuals of single race alone or in combination with any other group is 153,360. The number of Chippewa single race individuals is 105,907 and the number of Chippewa individuals of single race alone or in combination with any other group is 149,669. Finally, the number of Choctaw single race individuals is 87,349 and the number of Choctaw individuals of single race alone or in combination with any other group is 158,774. Interestingly, of these five groups, only one, the Navajo, is made up of a single tribal group or band; the remaining four are made up of more than one band and each group has its own requirements for enrolling as member of the tribe. Among the individuals who claim to be Navajo on the Census, 80% of the individuals are also on the tribal enrollment records, whereas only 20% of the Cherokee individuals are also on the tribal enrollment records (Thornton, 1997). Setting aside the question of measurement and changes in self-identification, the Census clearly demonstrates impressive population growth for American Indians; however, to fully understand the story of American Indians in the United States, it is necessary to examine their health and socioeconomic status relative to other population groups in the country.

Table 2. Top 25 American Indian Tribes for United States

Tribe	Census Year			
	2000		1990	1980
	Race Alone	Race alone or in combination		
All American Indians	2,475,956	4,119,301	1,959,234	1,420,400
Cherokee	281,069	729,533	369,035	232,080
Navajo	269,202	298,197	225,298	158,633
Sioux	108,272	153,360	107,321	78,608
Chippewa	105,907	149,669	105,988	73,602
Choctaw	87,349	158,774	86,231	50,220
Pueblo	59,533	74,085	55,330	42,552
Apache	57,060	96,833	53,330	35,861
Iroquois	45,212	80,822	52,557	38,218
Lumbee	51,913	57,868	50,888	28,631
Creek	40,223	71,310	45,872	28,278
Blackfoot	27,104	85,750	37,992	21,964
Canadian and Latin American	104,354*	180,940*	27,179	7,804
Chickasaw	20,887	38,351	21,522	10,317
Tohono O'Odham	17,466	20,087	16,876	13,297
Potawatomi	15,817	25,595	16,719	9,715
Seminole	12,431	27,431	15,564	10,363
Pima	8,519	11,493	15,074	11,722
Tlingit-Haida	14,825	22,365	14,417	9,509
Alaskan Athabaskans	14,520	18,838	14,198	10,136
Cheyenne	11,191	18,204	11,809	9,918
Comanche	10,120	19,376	11,437	9,037
Paiute	9,705	13,532	11,369	9,523
Osage	7,658	15,897	10,430	6,884
Puget Sound Salish	11,034	14,631	10,384	6,591
Yaqui	15,224	22,412	9,838	5,197

Footnotes:
* Excludes Canadian
Source: U.S. Census

Table 3. Status of American Indian and White Populations

	American Indian	White
Mean Years of Education	12.7	13.8
Median Household Income	$33,132	$44,389
Live births		
Number of births: 2005	47,721	3,310,308
Births per 1,000 women, 15-44 years old	63	68
Births with low birth weight	7.5%	7.2%
Teenage Childbearing		
Live births	6.5%	2.9%
NonMarital Childbearing		
Live births to unmarried mothers	63.5%	31.7%
Health status		
Persons in fair or poor health (all ages)	12.0%	9.5%
Limitation of activity caused by chronic conditions		
Percentage of persons	18.4%	11.6%
Serious psychological distress - past 30 days		
Persons over 18 years old	4.7%	2.8%
Health risk factors		
Men 18 years and over who currently smoke:	31.0%	24.0%
Women 18 years and over who currently smoke:	26.0%	20.0%
Use of selected substances in 30 days		
Any Illicit Drug (percent of population)	13.7%	8.5%
Marijuana	9.8%	6.4%
NonMedical psychotherapeutic drug	5.3%	3.0%
Any Tobacco	42.3%	31.4%
Cigarettes	38.1%	26.1%
Cigars	7.8%	5.7%
Lifetime alcohol drinking status among adults		
Current Drinker	52.8%	63.8%
Former Drinker	19.9%	14.0%
Lifetime Abstainer	27.3%	22.0%
Health insurance coverage		
Persons under 65 years without health insurance coverage	28%	17%
Mortality		
Life Expectancy	74.5	76.9
Number of deaths	14,037	2,077,549
Deaths per 100,000 population	438.5	858.1
Infant deaths per 1,000 live births	8.1	5.5
Leading causes of death		
	Heart disease Cancer Accidents	Heart disease Cancer Stroke
Source: U.S. National Center for Health Statistics (CDC)		
All data taken from Centers for Disease Control and Prevention. January 13, 2010. Health of American Indian or Alaska Native Population . Retrieved from http://www.cdc.gov/nchs/fastats/indfacts.htm		

American Indians' Health Status

Table 3 shows a brief overview of the current health status of Native Americans compared to the white population ("Health of American Indian or Alaska Native Population," 2010). Native Americans exhibit significantly higher health risk factors than the white population. For American Indians, health challenges often begin at birth. The American Indian population has lower rates of live births and a higher percentage of births with a low birth weight, which can lead to life-long health complications for the child. American Indians also have a higher percentage of teenage as well as non-marital childbearing than the white population. Twelve percent of American Indians rate their own health as "fair to poor" as compared to less than ten percent of the white population.

With the exception of drinking alcohol, American Indians report higher rates of engagement in health risk behaviors than the average white person. Native American men and women currently smoke tobacco at rates six to seven percent higher than the white population and are also more likely to use legal and illegal drugs than whites; however, it is notable that American Indian adults are less likely to be current drinkers and more likely to be lifetime abstainers than whites.

Perhaps the strongest evidence of differences in overall health is length of life. Life expectancy for an American Indian individual tops out at 74.5 years, whereas life expectancy for a white individual reaches 76.9 years. Similarly, American Indian children exhibit a higher infant death rate. Despite American Indians' higher health risk factors, they do share with whites the first two leading causes of death: heart disease and cancer; however, the third leading cause of death for the two populations is quite

different. The third leading cause of death for Native Americans is accidents; for whites, it is a stroke.

Diabetes and Obesity

Diabetes mellitus is a group of metabolic disorders characterized by abnormally high levels of blood glucose secondary to inefficient insulin action and/or secretion. The disease often leads to significant disability, including renal failure, blindness, and limb amputation, and to premature death (Markides and Miranda, 1997; U.S. Department of Health and Human Services Public Health, 1990). Diabetes is the one chronic disease that afflicts American Indians more frequently than other groups (U.S. Department of Health and Human Services Public Health, 1990; Wykle and Ford, 1999). Diabetes is now so prevalent that in many tribes more than 20% of the members have this disease and among two tribes in Arizona, the rate is 40% among adults (Markides and Miranda, 1997; U.S. Department of Health and Human Services Public Health, 1990).

Obesity is a powerful and well-established risk factor for the development of diabetes (Knowler et al., 1981). The prevalence of obesity among Native Americans is higher than among the general population in both males and females and at all ages (Brousseau et al., 1991); unlike the general population, women report higher prevalence of obesity than men over the life course (Matthews, Manor, and Powers, 1999). Obesity contributes to the high incidence of diabetes experienced by many American Indian communities, and it is also linked to hypertension and cardiovascular disease (U.S. Department of Health and Human Services Public Health, 1990). The increase in obesity among American Indians in the last 50 years has paralleled the increasing rates of

diabetes in the whole U.S. population (U.S. Department of Health and Human Services Public Health, 1990).

Substance Use

Alcohol abuse and alcohol consumption are a large part of the leading causes of death among American Indians on reservations and cities (Snipp, 1992). Even though alcohol consumption seems to be high among all American Indians, it actually varies by gender, age, and tribe (Beauvais, 1998; May, 1996; May and Gossage, 2001). A study by Beals and colleagues (2003) found that the Southwest American Indians samples were less likely to be current alcohol drinkers than either the United States population in general and the Northern Plains American Indian sample. Spicer and colleagues (2003) found that the rates of DSM-III-R alcohol dependence in their American Indian sample were in general higher than the comparative national average, and yet even here the Southwest women had very low rates. In different study among a Southwestern tribe, Robin, Long, Rasmussen, Albaugh, and Goldman (1998) found that individuals who were alcohol dependent also practiced binge-drinking. In a study among the Navajo tribe, Kunitz (2008) found that age was significant in all analyses of alcohol use and other substance use in which older people were less likely to have used a substance than younger people.

Marijuana use, methamphetamine use, and other drug use also varies across different American Indian tribes. One study found that amongst reports of lifetime substance use, marijuana was the most commonly used drug by both a Northern Plains tribe and Southwest tribe, followed by cocaine for the Northern Plains tribe and hallucinogenics for the Southwest tribe (Mitchell et al., 2003). When looking at drugs

only among the Northern Plains tribe and Southwest tribe, 15-24 year-olds had similar or higher rates than the older age groups. Mitchell and colleagues (2003) also found that overall, 40%-60% of the American Indians in the sample had never used any drugs and 85%-95% had not developed any drug disorder. The findings suggest that many drug use and drug disorders may not be as prevalent as previous research suggests. Although there is not an individual tribe study on methamphetamine use, a study in Los Angeles County found that methamphetamine use has replaced alcohol use as the primary drug problem reported by American Indian individuals entering treatment (Spear et al., 2007).

Mental Health

Unfortunately, there are few studies that focus on American Indians and their mental health. In a small community-based epidemiological study among Northwest Coast village, Shore and colleagues (1973) found that 70% of the sample experienced a mental disorder in their lifetimes. In a more recent study and one of the few large-scale studies of American Indians, Beals, Manson, Whitesell, Mitchell, Novins, Simpson, Spicer and AI-SUPERPFP team (2005), found substantially lower rates of major depressive episodes, both lifetime and past 12 months, when compared to the National Comorbidity Study sample. Moreover, Beals et al. (2005) found differences in the experience of depression between the Northern Plains tribe and the Southwest tribe. Their finding suggests the importance of paying attention to variation *within* the American Indian community with respect to mental health challenges. Generational differences are also significant. Smaller studies of American Indian communities report rates of depression among older American Indians to range from 10 to 30% (Curyto, Chapleski, and Lichtenberg, 1999; Kramer, 1991; Manson, 1992).

The reasons behind the higher rates of mental disorders among American Indians remain largely unexplored. One might also point to family instability as a possible factor. Studies estimate that over the past 20 years as many as 25 to 30% of American Indian children have been removed from their families (Cross, Earle, and Simmons, 2000) and the mental health consequences of these removals are unknown. Moreover, the strong and proud legacy of military service in the American Indian community makes an unintended contribution to rates of mental health disorders. Among adult American Indian men, one in three have military experience (Census, 2000). The rate of Post Traumatic Stress Disorder (PTSD) among Northern Plains and Southwestern Vietnam veterans was approximately 30% in the 1990s. This was significantly higher than the PTSD rates for white (14%), and black (21%) veterans (NCPTSD/NCAIANMHR, 1996).

Although each of these explanations may be valid and relevant, they constitute an incomplete approach to understanding the complex and diverse reasons behind American Indian communities' rates of mental distress and disorder. Taken together, these explanations focus on important sociological factors contributing to high rates of psychological distress; however, a comprehensive explanation requires taking into account the wider political and historical context. For American Indians, despite formal recognition in the U.S. Constitution, the state-perpetuated physical and cultural genocide against American Indians initiated a lengthy period of mistreatment, misrecognition, and oppression. Although the mental health consequences of this political history for American Indians are unknown, a study by Whitbeck, McMorris, Hoyt, Stubben, and LaFramboise (2002) of upper Midwest American Indians found that perceived discrimination was a powerful indicator of depressive symptoms. Theories of

multiculturalism and the politics of recognition provide a necessary theoretical framework for incorporating these factors; however, I argue the conceptual foundations of the politics of recognition need to be broadened to include the concept of demoralization.

Socioeconomic Status

In general, American Indians tend to have lower levels of socioeconomic status in terms of education, income, poverty, unemployment, and higher rates of female-headed households as compared to non-Hispanic whites (Farley, 1996; Sandefur and Sakamoto, 1988; Snipp, 1989, 1992). Lower socioeconomic status among Native Americans is associated with a higher propensity of speaking a Native American language and of not speaking English fluently (Snipp, 1989, pp. 181-184), compared to Native Americans with higher socioeconomic status. Native Americans married to other Native Americans tend to have lower incomes and higher poverty rates (Snipp, 1989, p. 164) compared to Native Americans who are intermarried with whites. American Indians living in counties that include tribal lands tend to have lower educational attainment (Snipp, 1989, pp. 198-201), higher poverty rates (Snipp, 1989, p. 252), lower household incomes (Snipp, 1989, p. 252), lower occupational attainment (Snipp, 1989, p. 237), a greater prevalence of female-headed households (Snipp, 1989, p. 136), and higher fertility (Snipp, 1989, p. 150) compared to American Indians who live in metropolitan areas or in counties where there are no tribal lands. American Indian men who migrate out of their region of birth experience an earnings advantage compared to American Indian men who stay in their region of birth; unfortunately, Native American women do not experience this advantage if they move out of their region of birth (Huyser, Sakamoto, & Takei, 2010). These lower

socioeconomic status markers make American Indians more vulnerable to mental health stressors and disorders, such as depression (Avison, McLeod, and Pescosolido, 2007; Mirowsky and Ross, 2003a; Mirowsky and Ross, 2003b).

Native American Culture

In addition to constructing a comprehensive understanding of the complex American Indian racial identity, there are distinct tribal cultures affiliated with each tribal community. Each American Indian culture subscribes to differing understandings of illness and mental health (Kleinman, 1980). Exploring these different understandings, however, requires an accurate understanding of mental disorders, particularly depression, as formulated in accordance with alcoholism, antisocial behavior, physical illness, and prolonged grief (Manson, Shore, and Bloom, 1985). In addition to co-occurrence of mental stressors, American Indians often do not use a Western medicine framework to understand illness or psychological distress, which requires research to be sensitive to how each concept is constructed (Manson, 1982; Mohatt and Blue, 1982). In addition, many Native Americans utilize both Western medical doctors as well as Native American traditional healers to serve their well-being needs (Kim and Kwok, 1998; Marbella et al., 1998).

Despite the disadvantages faced by many American Indians, the Native American community does offer cultural norms and values that facilitate treatment of and recovery from stressors. The Native American perspective on life is a relational worldview that includes an understanding of illness and disability, and it tends to see and accept complex interrelationships (Cross, 1998, p. 147). The cultural norms and values of wholeness and harmony equip American Indians with skills and a cultural lens to deal with

psychological stressors. Individuals who learn about and identify with their traditional ethnic culture are considered to be engaged in the enculturation process. Zimmerman, Ramirez, Washienko, Walter, and Dyer (1998, p. 199) found that enculturation provided support for Native American youth and had a beneficial effect on their self-esteem and other aspects of their psychological well-being. Another study of American Indian children found that enculturation or traditional culture had a positive affect on the children's academic performance (Whitbeck et al., 2001). Whitbeck and colleagues (2002) also found that traditional practices reduced depressive symptoms among American Indian adults.

Dissertation Outline

In this first chapter, I have briefly described the context in which American Indians live and some of the adversities that they face. Beyond overcoming history, political misrecognition, a complex racial identity, health issues, and lower socioeconomic status, American Indians have a distinctive social structure and perspective on life and health that contribute to their endurance and survival. The following chapters explore the relationship between the status of psychological distress and different aspects of tribal and individual life.

Chapter 2 is the in-depth discussion of my theory. I discuss the theory of multiculturalism and my extension of the theory to include demoralization. Chapter 3 presents the Kessler psychological distress with demographic, cultural, social support and health behavior control variables among adults (male and female, ages 20 through 57). The purpose of Chapter 4 is to provide an exploration of self-rated health with demographic, cultural, social support and health behavior control variables among adults.

The analysis of psychological distress and individual perceived health provide a glimpse into individual and group demoralization.

The concluding chapter summarizes the study and highlights its primary contributions to the understanding of American Indian mental health. I underscore the importance of psychological distress as one way of understanding a population's health and illustrate the exceptional ways in which American Indians cope with psychological distress. By furthering understanding of the coping mechanisms employed by the American Indian, this research leads to a greater appreciation of different communities' unique strengths and weaknesses in dealing with psychological distress.

Chapter 2: Demoralization, Misrecognition, and Resilience: the Politics of Recognition among American Indians

In 1492, Christopher Columbus mistook the Americas for the East Asian mainland and named the inhabitants, "Indios." The name "Indios" is still used today and its English equivalent is "Indian" to refer to the indigenous of the Americas. Unfortunately, Columbus's mistake was not the end of the misrecognition for the indigenous populations of North and South America or becoming the recipients of the stigmatized label, "savage" or "slave" (Sale, 2006). Charles Taylor and Will Kymlicka (1992; 1997) argue that groups must have appropriate recognition because misrecognition causes harm to the group and individual self-concept. Appropriate recognition provides an individual and a group with the authority to independently form their identity and allows Native Americans agency in forming their destiny. Misrecognition removes authority and agency from the individual and group and forces a distorted image onto the individual and group. This process of misrecognition is similar to Goffman's concept of stigma where an individual with an attribute is deeply discredited by his/her society and is rejected as a result of the attribute; thus, spoiling the availability of a normal identity (Goffman, 1963). This chapter affirms the need for recognition for American Indian tribes and extends the concept of damage from misrecognition to include the concept of demoralization. Demoralization refers to the emotional and existential damage created through systematic oppression and disadvantage in which an individual and/or group may be in a state of hopelessness, helplessness, meaninglessness, and psychological distress (Dohrenwend, Shrout, Egri, & Mendelson, 1980; Rickelman, 2002). Despite the fact that demoralization is not listed in the Diagnostic and Statistical Manual, Fourth Edition, Text

Revision (DSM-IV-TR), it is accepted as a psychiatric state that can stem from both physical and/or social causes (Clarke & Kissane, 2002; Frank, 1984; Kissane, Clarke, & Street, 2001). I apply both the concepts of misrecognition and demoralization to a case study of Native Americans in the United States and explore how the historical marginalization and systematic genocide of American Indians has undermined the autonomy and identity of Native Americans to increase their vulnerability to mental illness. I also discuss the cultural and social aspects of the Native American community that allow American Indian people to be resilient against psychological distress and overcome obstacles.

I will explore my research question in the following four sections. The first section will explain the importance of individual and group identity and how it is developed through interaction with others. Second, I will give a brief summation of the arguments set forth in the debates over the politics of recognition and how multiculturalists argue that American Indian tribes should receive self-governing powers. The third discussion will give the case of Native Americans. In the final section, I will give the sources of resilience that American Indian tribes possess to combat misrecognition, demoralization, and its effects.

Importance of Individual and Group Recognition

Charles Cooley says, "Society is an interweaving and interworking of mental selves...Society is internalized in the individual psyche; it becomes part of the individual self through the interaction of many" (Cooley, 1902; quoted in Coser, 1977, pp. 307). Cooley argues that a person's self grows out of a person's contact with others. The self is not first individual and then social but rather arises through communication with others

(Cooley, 1902). It is through this interaction and communication that the individual identity arises and thus the group identity. It is also through this process that the looking-glass self originates.

The looking-glass self is a concept capturing the idea that self-perception is an internalization of how we are seen by others. Cooley (1902) defines the looking-glass self as having three major elements: "the imagination of our appearance to the other person, the imagination of his judgment of that appearance, and some sort of self-feeling, such as pride or shame" (Cooley, 1902, p. 184). In imagining the other person's mind, we have some thought of our appearance, manners, aims, deeds, character, and friends and will work to change appearance and action according to self-feeling of the other person's imagined judgment.

The other person's response to the individual can either foster and affirm a healthy self-concept or damage and discredit the self-concept, which can develop into stigmatized identity. A stigma is applied to an individual who possesses an attribute that is discredited by society (Goffman, 1963). In an application of Cooley's conception of self and society, the stigmatized individual would also be a part of a stigmatized group, which would also possess the discredited attribute as an aggregate of individuals. Unfortunately, the surrounding "normal" society of individuals believe the "person with the stigma is not quite human…[and] construct a stigma-theory, an ideology to explain his inferiority and account for the danger he represents, sometimes rationalizing an animosity based on other differences" (Goffman, 1963, p. 5).

The stigmatized individual may develop a formulation of the self-system, "I am inferior" (Goffman, 1963, p. 13) from internalizing the "normal" society's stigma theory.

In an effort to overcome the stigmatized identity, the stigmatized individual is likely to become self-conscious and calculating about the impression she is trying to make. If she is self-conscious and constantly calculating her impression the individual may begin to feel helpless, hopeless, and a sense of powerlessness in her general life. These feelings of helplessness, hopelessness, and powerlessness could become the psychiatric syndrome of demoralization (Kissane, et al., 2001).

Psychiatric epidemiologists have developed the concept of demoralization to characterize the nonspecific psychological distress that people experience in certain situations that they cannot control (Dohrenwend, et al., 1980). Frank (1973) identified the following characteristics of demoralization: (a) a sense of incompetence or failure to meet one's own or others' expectations, (b) inability to cope with specific problems, (c) a sense of powerlessness to change the perceived problematic situation(s), (d) perceived lack of control over one's feelings or a fear of "going crazy," (e) a tendency to cling to a narrow range of habitual activities, (f) a tendency to avoid responsibility, change, and challenge, and (g) a reluctance to make long-term plans. Unfortunately, under the influence of demoralization, an individual may have symptoms of anxiety or depression (Cockram, Doros, & de Figueiredo, 2010; Dohrenwend, et al., 1980; Frank, 1984; Rickelman, 2002). An important difference between clinical diagnosis of depression and demoralization is illustrated in the presence of a stressful situation. A person who suffers from depression knows what needs to be done but cannot initiate the necessary actions to deal with the situation; whereas, a demoralized person, when faced with a stressful situation, will have no clue how to proceed even though he is motivated to get out of the circumstances (Cockram, et al., 2010). In addition to the sociological origins of

demoralization, more recently, political theorists addressing the persistence of inequality and discrimination in modern, liberal societies have begun to theorize the political origins of group and individual demoralization. The following section provides an overview of this approach, which is commonly referred to as "the politics of recognition."

Politics of Recognition

While sociological theories of demoralization focus on the actual process through which identity formation is linked to demoralization and stigmatization, political theorists tend to approach demoralization amidst a broader debate about inequality, community, and individualism in a modern, liberal democratic polity. Not surprisingly, political theorists emphasize the *political* origins of demoralization via the state's non-recognition or misrecognition of a particular cultural group. For political theorists, the sociological process that produces a demoralized individual and cultural group is itself embedded in, or produced by, a lengthy history of political inequality and misrecognition by the state.

The core criticism articulated by multicultural political theorists is aimed squarely at the state's founding public philosophy: classical liberalism. Multicultural theorists argue that liberalism's traditional roots in philosophies of individualism and its emphasis on purely individual rights utterly fail to address the inequalities and damages visited on individuals because of their membership in a stigmatized cultural group. More specifically, liberalism, in paying attention solely to ensuring *individual* equality, inadequately addresses the impact of *cultural group* inequality. Inequalities in access to power (political, economic, social) across different cultural groups enable dominant groups to impose their cultural norms and practices on minority groups. In particular, dominant cultural groups can use their access to state resources and political power to

demonize or stigmatize minority cultural groups. In fact, misrecognition and domination through the state was one of the core features of the colonial encounter between Native Americans and the emerging American nation. Multicultural theorists' arguments and proposed political solutions are, therefore, important for understanding the linkages between Native Americans' political history, their current demographic and mental health status, and the various communities' experiences with mental illness. In addition, the solutions proposed by multicultural theorists are directly relevant to this study's emphasis on resilience and cultural autonomy.

In the *Politics of Recognition*, Charles Taylor (1992) argues that if an individual or a group does not receive appropriate recognition the individual or group will be harmed causing a demeaning picture of himself or herself. Will Kymlicka (1996) affirms the importance of the identity and argues that modern governments should work to protect sub-group rights as well as individual rights. The sub-groups in modern governments are the minority groups. The source of identity for both the group and the individual stems from the group's culture.

Kymlicka (1996) views culture and society to be one in the same. The particular culture that he discusses is societal culture, which is the history, traditions, and conventions that go along with the society, and the set of social practices and institutions that are associated with the societal culture.

The individual's culture of origin provides basic resources for him/her to navigate the world and also provides him/her with self-confidence and self-worth. As members of stigmatized or demoralized cultural groups, individual group members may find themselves either lacking those resources or discounting their societal culture's capacity

to provide a valuable and affirming sense of self. Kymlicka (1997) argues that it is important to strengthen cultural groups and provide protections for various minority groups, especially national minorities. National minorities are groups who were created from the incorporation of different nations into a single state. The groups may be involuntary, as it occurs when one cultural community is invaded and conquered by another, or is ceded from one imperial power to another, or when its homeland is overrun by colonizing settlers. Two examples of national minorities in the United States are American Indian tribes and Puerto Rico. Kymlicka argues that the governments with national minority groups should work in the direction of strengthening their societal culture and provide the national minority groups with extensive self-government rights.

According to Kymlicka, liberal states must provide explicit protections and cultural group rights to enable national minorities to both defend their cultural communities and reclaim their authority and agency. In other words, by granting national minorities some degree of *political* autonomy, multiculturalists hope cultural communities can use this greater political power and protection to reverse the sociological processes that have created demoralization and inequality. The solution, in effect, is to create a political space within which the cultural community can strengthen and perpetuate its group and its individual members. Many American Indian tribes have language preservation programs in which language and cultural customs are recorded and language courses are taught to younger generations.

Although multiculturalists' arguments have garnered a strong hearing within the academic community, it has also generated some debate. Because multiculturalists place such a strong emphasis on providing cultural group rights and protections, classical

liberals and feminists alike have raised concerns over dangers such group protections pose both for individual rights and the rights of other marginalized identities. Specifically, liberals fear that giving cultural communities greater self-government rights may impede the state's ability to ensure equal protection for individuals under federal law. Feminist theorists raise concerns over limitations on the state's ability to redress inequalities *within* cultural groups on the basis of other disadvantaged identities. Specifically, Susan Moller Okin (1998) argues that multicultural group rights theorists fail to acknowledge that minority cultural groups are gendered and may not support feminist ideals of women possessing human dignity equally with men and having the opportunity to live freely chosen lives. Multicultural theory assumes that an individual's culture provides the individual the capacity to choose what kind of life is good for one, but does not pay special attention to the different roles offered to the various cultural members. Secondly, Okin argues that multiculturalists pay insufficient attention to the private sphere, which is the realm of the domestic or family life. Okin (1998) asserts that many of the world's cultures are highly patriarchal and continue to infringe on women's rights and thus, it is importance for multiculturalists to acknowledge the gendered nature of culture as well as its private sphere.

Both liberal and feminist critiques of multiculturalism suggest that the danger of a solution centered on cultural group rights and self-government is the possibility of reifying or creating new sources of inequality for individual group members. Thus, rather than enabling individuals to draw on the resources of the community to combat demoralization and its negative side-effects, cultural group rights may merely create or reinforce an additional source of oppression for that individual.

Sources of Misrecognition of Native Americans

Colonization

Starting in the early 1600s, European countries began to build colonies along the eastern coast of the now United States. There were many Native American tribes that also lived along the eastern coast when the settlers arrived from Europe. This allowed early interaction between colonists and Native American people and for American Indian people to be present throughout the history of the United States. The presence of American Indians can be found in history books and the myth of the first Thanksgiving, as well as paintings depicting relations between settlers and Native Americans. A notable observation in most depictions of early interactions between the settlers and the American Indian people is the difference in dress—the colonist men are fully clothed and wearing outerwear and the Native American men are wearing only a breechcloth and feathers even in winter. Thus, these types of depictions are a reification of the image of the uncivilized American Indian savage.

Indian Affairs was established in 1824 as part of the United States Department of Interior. Within Indian Affairs, there is the Bureau of Indian Affairs that provides services to American Indians and the Bureau of Indian Education that provides education to Native American students. Unfortunately, from 1879 with the establishment of the Carlisle School until the 1950s, American Indian children who were educated through the boarding school system were discouraged from speaking their tribal language, participating in tribal customs, and rarely allowed to visit their families. At school, the children were given vocational training geared toward service professions, such as housekeeping, maintenance, and farming (Brophy & Aberle, 1972; Nichols, 1986).

Unfortunately, the boarding school system facilitated the loss of tribal language and the forced adoption of the colonizer's language, English. The actual history of American Indians' contribution to the building of the nation and their relationship to the state stands in marked contrast to almost all representations of American Indians in popular media, national myths, and cultural stereotypes.

Media Representations

In addition to American Indian people being present throughout U.S. history, the Native American people are also in current media representations such as movie westerns, sports mascots, and environment advertisements. One popular movie genre is westerns. Interestingly, westerns were among some of the earliest commercial films released in the 1920s and 1930s. John Wayne made westerns especially popular. Unfortunately, westerns in general valorize the cowboys and portray Native Americans in one of three ways, the violent scalping savage (male), the gentle "noble savage" (male) or the overtly sexual and subservient squaw (female). The violent savage typically hunted the setters with the purpose of scalping the white men and kidnapping the white women. The "noble savage" tends to be a young naïve man or an elderly chief. An example of the naïve young men is in the 1930s TV show depiction of the Lone Ranger and Tonto. Within the Lone Ranger and Tonto dynamic, Tonto is the simplistic and foolish sidekick who is never the hero and is dependent on the strong wise hero, the Lone Ranger. The "noble" elderly chief typically will befriend a white newcomer and share tribal and spiritual secrets, which will bring the white newcomer to a closer relationship with the earth (Deloria, 1980a). The final typical Native American media representation is the overtly sexual and subservient squaw. A contemporary example of the overtly sexual

American Indian woman is the 1995 Disney film, "Pocahontas." In the Pocahontas animated movie, Pocahontas had a Barbie-doll-type body, which no other woman in the film possessed; additionally, she was eager to support the English captain, John Smith.

Sports mascots of Native Americans are a dehumanizing caricature of American Indians. It is a caricature because the mascot often uses sacred feathers, dress, and mimicked dance as a way to rally the sports fans. In both the presentation of American Indian culture in the cinema and sports mascots, there is no real relevance or accuracy to actual Native American culture or practice (Deloria, 1980a, p. x). In 2005, the NCAA banned the use of Native American nicknames unless approved by the American Indian tribe.

Another example of the "noble savage" has been represented in the advertising media. The environmental organization, Keep America Beautiful, issued an advertisement campaign in 1971 featuring the "crying Indian." The "crying Indian" campaign was a successful campaign in starting Earth Day, but unfortunately, it did perpetuate the stereotype that American Indians are not present day or modern individuals but instead are old and wear feathers. Deloria (1980a) observes that in many media representations and also in books of American Indian portraits, the pictures are of elderly American Indians or of Native Americans in the 18th century, which perpetuates the concept of the vanishing or dying of American Indian peoples.

Reservations

In 1830, President Jackson signed the Indian Removal Act. The Act authorized the relocation of any Native American tribe residing east of the Mississippi river west, primarily to Oklahoma territory (Indian Territory). The "Five Civilized" tribes appealed

to the Supreme Court to stay along the East Coast. Chief Justice John Marshall upheld the sovereignty of the tribes, but President Jackson ignored the Supreme Court ruling and forcibly removed the tribes. The forcible removal of the "Five Civilized" tribes resulted in the "Trail of Tears," a lengthy journey in which many Native Americans died as a result of exposure, disease, and starvation. The lands to which the American Indian people were moved to and currently reside are not in locations that the Native American people freely chose. The lands are often located in arid and isolated areas of the United States and do not offer many natural resources. The lands are also often not part of the tribes' traditional homeland.

The two tribes that are examined in this dissertation include one from the Southwest and one from the Northern Plains. The Southwest of the U.S. broadly defined consists of the following states: California, Nevada, Arizona, New Mexico, Utah, Colorado, Oklahoma, and Texas. The reservation lands in this area are primarily located in the more rural and arid parts of the Southwest. Even though the reservations are in remote areas, they are located in the region of the Sunbelt, which has experienced economic growth since the 1970s. The Northern Plains broadly defined are the following states: Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, Utah, and Wyoming. Unlike the Southwest, the Northern Plains region has yet to experience an economic boom and has few metropolitan areas. The main economy in the Northern Plains comes from agriculture. Similar to the Southwest tribes, the Northern Plains tribes are located in rural and remote areas of the states; unfortunately, since the area in general is rural and underdeveloped, the tribal lands are even more so.

Substance Use: Myth versus Reality

Unfortunately, one of the major stereotypes that Native Americans face is the "drunken Indian" stereotype. Sadly, this stereotype has been created from stories of early interaction with "fire water" or alcohol, which was given to the American Indians by European settlers. In addition, alcoholism contributed to the tragic death of both Jim Thorpe and Ira Hayes. Jim Thorpe was the Native American athlete who won Olympic gold medals in the 1912 pentathlon and decathlon; Ira Hayes was one of the five Marines depicted in the iconic photograph of the flag raising on Iwo Jima during the battle of Iwo Jima in World War II. Along with the deaths of these two remarkable individuals, alcohol related deaths are among the top four leading causes of death for Native Americans (Snipp, 1989). Alcohol use and abuse may be a result of self-medication. The self-medication hypothesis suggests that people with a primary anxiety disorder use alcohol to reduce symptoms of anxiety (Quitkin, Rifkin, Kaplan, & Klein, 1972).

As discussed above, demoralization often has similar symptoms to anxiety and depression. I argue that American Indian people who chose to use and abuse alcohol are in fact self-medicating because of demoralization. It is also important to note in a study comparing two tribes, the American Indian people who consume alcohol are binge drinkers, but a larger proportion of Native American people are lifetime alcohol abstainers (Beals, et al., 2003). Thus, although alcoholism is clearly a part of the picture—there is a whole other side that is never presented: many or most Native Americans never drink at all.

Sources of Resilience for Native Americans

After 500 years of colonizers imposing their image of the colonized as a subjugated people who are uncivilized and uneducated (Fanon, 1963), the self-image of Native American people at both the individual and group levels has become distorted and the community has become demoralized. Vine Deloria (1980b) in his chapter in *Pretend Indians* describes how he understands the North American Indian to see himself:

> *At least partially coinciding with the image of the Indian as held by the white man is the image that the Indian holds of himself. Whereas the white man sees the Indian as a savage, the Indian too often sees himself as an incompetent and childish figure who must have his mistakes forgiven because he is an Indian who does not really understand. The two images complement each other in a great many respects and perhaps the most devastating aspect of their complementary is that the Indian has convinced himself that the white man is naturally more intelligent than the Indian and therefore must receive deferential treatment on policy matters.* (Deloria, 1980b, p. 51)

Despite having been given a stigmatized image, American Indian people do not have to simply accept the stigma as a permanent feature for themselves. Goffman (1963) says that a stigmatized individual may see the trials suffered as a blessing in disguise, especially if it is felt that suffering can teach one about life and people. But more importantly, Goffman says that the stigmatized individuals can use the life experiences to re-assess the limitations of the part of society that is considered "normal." In addition, Native American people also have the power to create trajectories for themselves. George Herbert Mead (1934) expands the looking-glass self to understand that individuals are not simply impressible selves but rather can create trajectories that may shape how the individual (or group) is seen by others.

Deloria agrees with Mead, stating: "American Indians can create for themselves an ideal image which not only incorporates past disasters but which also inherently indicates within the communities a positive direction for the future" (1980b, p. 54). As part of creating an ideal self-image for Native American people and communities, the positive aspects of the tribal culture and family must be emphasized. The process of American Indians reclaiming their self-image and overcoming the systematic genocide perpetuated by the U.S. government are all examples of resilience among Native American peoples. Resilience refers to a dynamic process encompassing positive adaptation within the context of significant adversity (Luthar, Cicchetti, & Becker, 2000).

Despite their difficult and trying history, Native American people are a very present and vital community and remain a distinctive cultural group. Thorton (1997) argues that despite the negative origin of reservation lands, the very existence of reservation lands provide a permanent geographical area in which tribal culture can be sustained. Even though reservation lands do have negative aspects of being located in remote and arid areas of the country, they also represent a source of strength. The strength of the reservation comes from the fact that it is a tribally owned and governed area, in which the tribal members are able to practice tribal customs. It is also an area in which Native Americans support new economic endeavors. Cultural solidarity has long been a useful tool for many immigrants in building economic enterprises (Bonacich & Modell, 1980) and with the existence of tribes and reservation lands, Native Americans have the potential for economic success using cultural solidarity. Cornell and Kalt's (1998) tribal economic research argues that tribal sovereignty allows for tribes to choose a cultural match for successful economic projects.

Within the safety of cultural solidarity, individual tribe members have the opportunity to affirm their own culture and reject the negative stigma placed on them by the dominant culture. The embracing of ethnic identity and culture increases self-esteem and reduced symptoms of depression (Whitbeck, Hoyt, Stubben, & LaFromboise, 2001). The increase of self-esteem and self-efficacy also diminishes the presence of demoralization, which in turn increases competence and human connectedness (Clarke & Kissane, 2002; Dohrenwend, et al., 1980).

American Indian culture also uses the philosophy of wholeness, which can also help individuals understand stress (Cross 1998). A framework for handling stress that is incredibly powerful also decreases depression and demoralization (Slavney, 1999). The cultural norms and values of wholeness are taught and practiced by the family. The family networks of many tribes are extensive and include both a biological family and a tribal clan-system family. Both of these systems of identifying family can lead to additional social support, which help reduce the effects of demoralization (Clarke & Kissane, 2002; Cockram, et al., 2010; de Figueiredo, 1993; Jacobsen, Maytal, & Stern, 2007; Kissane, et al., 2001; Slavney, 1999).

Culture provides a wonderful system in which individuals are able to develop their self-image and understand their role in society. Kymlicka (1996) stresses the importance of allowing national minorities, such as American Indian tribes, to possess full agency to develop and shape their culture without involvement from the state; however, as discussed above, critics of multiculturalists raise serious concerns about the possible trade-offs and costs involved in strengthening and re-enforcing "culture." Specifically, Susan Miller Okin (1998) challenges Kymlicka's laissez-faire attitude

toward cultures because many traditional cultures are patrilineal and thus are exploitative towards women. Whereas this may be true for many world cultures, this generalized statement is not true for all traditional Native American cultures. Among the two tribes discussed in this dissertation, the Southwest tribe's traditional culture is matrilineal and the Northern Plains tribe is patrilineal. Northern Plains tribes are more male-dominated than the Southwest tribe. Yet pre-reservation (especially pre-colonized) Plains tribes had respect for and honored their females, and the women were often central to their tribes' cultures (Collins, 2005). In the specific case of Native American groups, women may not be an exploited or excluded group. The honor and respect towards women is paid because of the connection women have with the Spirit Mother and the important role female deities play in most traditional beliefs (Allen, 1986). The female deities within Native American traditional beliefs are just as important and influential as the male deities, if not more so in certain tribes. The contrast of male and female deities within Native American beliefs and western religions is a stark difference. In western religions, the primary deities are male and often the sole deity is male. The understanding of the importance of both the female and male roles that are exhibited in American Indian spiritual beliefs are translated into Native American culture to value the importance of women and their role in society.

American Indian peoples are considerably diverse in both cultural practices and forms of spirituality. Despite the diversity, many scholars of Native American religion and spiritual practices argue that there is common theme with the diversity (Allen, 1986; Beck, Walters, & Francisco, 1993; Gifford, 2005; Gill, 1982; Hultkrantz, 1987). First, spirits are associated with animals, plants, and other aspects of the natural world. Second,

rituals accompany transitions between life stages and the spiritualities are geographically based. The importance of geographically-based spiritual beliefs helps to explain the damage caused by the U.S. government when they forcibly moved tribes from their historical and traditional homelands. Finally, American Indian people do not compartmentalize their spiritual beliefs from everyday life and occurrences. In fact sacred practices and traditions are seen as integral to the collective well-being (Beck, et al., 1993). The understand of the inter-relationship between spiritual world and everyday life also contributes the understanding of social roles within the society and the overall importance of each role. In addition to the understanding of social roles, it also provides a framework for social networking and behavior.

The elaborate social network offered by American Indian communities can also foster spirituality and political action. The interworking of spirituality and political action can be seen through the "ethnic renewal" (Nagel 1996) that has been observed in American Indian communities since the 1960s. It has been through the American Indian Movement (AIM), which fought for sovereignty rights and raised awareness of urban Native Americans. It has also been observed through the growing numbers of people asserting their American Indian identity on public surveys, such as the U.S. Census (Eschbach, Supple, & Snipp, 1998; Garroutte, 2003; Garroutte, et al., 2009; Snipp, 1986, 1989, 1997). The growing "ethnic renewal" can provide the needed support to actively reclaim the image of the American Indian in U.S. society and support the economic revitalization of reservation lands.

As illustrated through out the above resiliency section, Native American people continue to be rich in social capital. The social capital rests in the extended social

network, traditional rituals, cultural beliefs, and overall ethnic identity and renewal. This rich source of capital is being harnessed to produce economic growth and ultimately will combat demoralization through American Indians' ability to produce a new self-image.

Chapter 3: Methodology

The data analyzed in this dissertation project is from a study named, American Indian Services Utilization, Psychiatric Epidemiology, Risk and Protective Factors Projects (AI-SUPERPFP) from the Centers for American Indian and Alaska Native Health (CAIANH) at the University of Colorado at Denver. The AI-SUPERPFP was funded by the National Institute of Mental Health (1995-2000) to support the first comprehensive assessment of the prevalence of alcohol, drug, and mental health problems and attendant service use in two well-defined samples of American Indians.

The AI-SUPERPFP was a unique study yielding data heretofore unavailable. The populations of inference were clear, if circumscribed: enrolled members of two large tribal groups, one drawn from the Northern Plains and the other from the Southwest, who were between the ages of 15 and 54 in 1997 and living on or near their respective reservations. In the past, a good number of American Indian and Alaska Native communities regretted their participation in research efforts that highlighted specific, often stereotypic, problems and had wide-ranging effects, including increased negative publicity, decreased fiscal investments in local projects, and declining tourism. Therefore, unless specifically requested otherwise, the CAIANH use general cultural descriptors—for AI-SUPERPFP, Southwest and Northern Plains—rather than specific tribal or community names.

Data collection was conducted rigorously in a challenging setting (e.g., many homes did not have electricity or phones; street addresses often did not exist or were meaningless). The core psychiatric epidemiological instrumentation was the UM-CIDI, the basis of the most current data of the prevalence of mental disorder in the U.S. at the

time, the National Comorbidity Survey (NCS). As will be explained later, this instrument was subjected to extensive focus group review and rendered more culturally appropriate. Other AI-SUPERPFP measures had undergone similar review and revision. The health services section, while based on the current theoretical models in the field, was tailored to reflect the unique services contexts for American Indian reservation populations. Additionally, quantitative measures emanating from the CAIANH's long-term ethnographic efforts assessed locally meaningful constructs, such as local idioms of distress and traditional spirituality. In summary, AI-SUPERPFP was designed to render estimates of the prevalence of DSM disorders that could be placed in the context of comparable national and international efforts, but in ways that honored the cultural distinctiveness of American Indians.

Data Collection

The initial two years of the AI-SUPERPFP were spent on instrument and sampling frame development in addition to the acquisition of the necessary community and tribal approvals. Data collection consisted of three phases, with the initial stage entailing a lay interview (that is, one administered by trained community members) that included the Composite International Diagnostic Interview, University of Michigan version (UM-CIDI; Kessler et al., 1994;Wittchen and Kessler, 1994), an extensive health services section, a comprehensive assessment of life stress, and scalar measures of distress, functionality, spirituality, social support, and other related constructs. In the second stage, clinicians used the Structured Clinical Interview for DSM-III-R (SCID; Spitzer et al., 1987) in a reappraisal of approximately 10% of the lay interview participants to obtain data concerning the relative agreement between lay- and clinician-

administered interview methods. Finally, almost 100 members of this latter set of participants also were interviewed ethnographically to further explore the context of their illness experiences and the cultural validity of DSM diagnoses.

AI-SUPERPFP included comprehensive assessments of the core elements of Stress-Vulnerability Theory (Dohrenwend, 1998; Thoits, 1982), in particular, multiple domains of stress: life events, recent events, chronic strains and traumas, social support, coping strategies, mastery, self-esteem, community mindedness, and others. Given the relatively stressful circumstances in which many American Indians live, measurement of these constructs allows a focused study of the mediators and moderators of any stress–illness relationships found, with the opportunity to demonstrate cultural variation in the models that they inform.

The AI-SUPERPFP was designed to allow direct quantitative comparisons to the populations in the most recently completed psychiatric epidemiological study in the U.S., the NCS, but in a culturally informed manner. AI-SUPERPFP incorporated elements of both comparability and cultural specificity in structured ways. The CAIANH acknowledge that this approach will be found wanting by strict advocates of either. For instance, precise comparability is an unattainable goal for any effort such as AI-SUPERPFP, which focused on a small culturally specific population, simply because such studies by nature lag temporally behind their general population counterparts—only those incorporated as supplemental samples within a larger study avoid this limitation. Thus possible history and/or cohort effects can threaten the validity of any and all comparisons with studies conducted after the original study (Cook and Campbell, 1979). Others suggest that even minor changes to wording may influence outcomes in

unpredictable ways (Narrow et al., 2002), thus rendering instrument adaptation efforts such as those in AI-SUPERPFP especially problematic. On the other hand, some investigators assert that the use of standardized methodologies, such as those employed by the NCS, imposes an artificial and inappropriate construction of human problems on nondominant cultures (Rogler, 1989).

Because of the cultural heterogeneity of American Indians, research within these communities provides an opportunity to examine the potential impact of cultural influences on the nature, extent, and expression of mental health and mental illness. Previous ethnographic, clinical, and quantitative studies suggest the impact of culture both on symptom expression (and thus determinations of illness prevalence) and on service utilization (Beals et al. 1991; Fleming 1996; Gurley et al. 2001; Manson 1994, 1996; Manson et al., 1985; Novins et al., 1999; O'Nell, 1989, 1993; O'Nell and Mitchell, 1996). For instance, Manson and colleagues (1985) demonstrated that meanings given to words such as depression and anxiety do not occur in many Native languages, nor do these descriptors correspond to indigenous categories of illness. Moreover, even when English-language terms such as depression are used, as they were in O'Nell's (1996) study of depressive-like experience on the Flathead reservation, they may have very different meanings. Furthermore, other idioms of distress, such as describing oneself or others as lonely, may be critical in better understanding depressed affect. Novins and colleagues (1999) compared suicidal ideation across three tribal samples of American Indian adolescents and found that the correlates of suicide ideation were consistent with each tribe's social structure, conceptualization of individual and gender roles, support systems, and conceptualization of death. In their work with American Indian Vietnam

veterans, Gurley and colleagues (2001) demonstrated that use of biomedical and traditional healing services differed by tribe and reflected relative accessibility and availability of these sources of support.

Sampling Frame

American Indian research has an advantage over many other groups since tribes maintain enrollment lists or tribal rolls. Conceptually, tribal enrollment may provide a better definition of group affiliation than does self-identification; for the CAIANH's purposes, however, an additional benefit is that tribal enrollment coincides with eligibility for tribal and IHS services.

The coverage of the tribal rolls of the population is thought to be excellent for adults, although children may not be enrolled until eligibility for tribal/IHS services is critical. As part of an earlier project with Vietnam veterans, the CAIANH calculated that the tribal rolls correctly identified over 95% of the population. When the tribal rolls from which the AI-SUPERPFP samples were drawn were compared to the Census 2000 figures, extrapolations suggested that at least 80% of the two sources overlaps. This agreement exists despite the fact that the Census 2000 data for these communities include non-American Indian/Alaska Natives (between 3% and 12% for the tribal communities in question), do not differentiate specific tribal affiliations, are subject to biases of undercounting, and do not include tribal members living near but not on the reservations as did the AI-SUPERPFP samples. The demographic distributions between the efforts are very similar and suggest that, if anything, AI-SUPERPFP was more likely to identify and interview those who were more mobile or had lower educational levels and incomes than did the Decennial Census. As mentioned previously, careful comparisons of the AI-

SUPERPFP and Census data were requested by the CAIANH's community partners and are planned in the near future; in the meantime, the evidence cited above supports the viability of tribal rolls as a reasonable sampling frame.

The use of tribal membership has yet another advantage: By selecting tribes whose cultures differ widely, one can maximize tests of the impact of culture. As mentioned previously, over 500 American Indian and Alaska Native tribes and villages are federally recognized, with many more seeking such status. Not surprisingly, most communities tend to be small. Moreover, cultural variation is significant, frequently dramatic (Driver, 1971; Kehoe, 1992; Spicer, 1962). Thus, when a choice is possible, comparing at least two tribal cultures that are quite dissimilar will permit stronger statements of the importance and impact of cultural factors.

Data Sample

The AI-SUPERPFP focused on one Southwest tribe and two closely affiliated Northern Plains tribes. The communities in question belong to different linguistic families, have different histories of migration, subscribe to different principles for reckoning kinship and residence, and have historically pursued different forms of subsistence. Yet both tribes have many experiences in common with other American Indian groups. They share similar histories of colonization, including dramatic military resistance, externally imposed forms of governance, forced dietary changes, mandatory boarding school education, and active missionary movements. Although based on quite different epistemologies, traditional systems of healing are active in both tribes. Unemployment is widespread. Both tribes have considerable variability in acculturation, education, and income. Previous research has indicated that the Northern Plains

population consistently appears to be at the highest risk for the development of substance use and associated problems, while the Southwest population has been at the lowest risk (Mitchell et al., 1999; Novins et al., 1999). Thus, selection of these two tribes provided an opportunity to account simultaneously for both the diversity and common experiences in a population that is relatively small, yet extremely diverse. Similar comparisons could, of course, be made between Caribbean and African Americans, or among Puerto Rican, Dominican, and Mexican-American groups.

AI-SUPERPFP chose to restrict the sample to those Northern Plains and Southwest tribal members living on or near (within 20 miles of the boundaries) their home reservations for two reasons. First, the official mandate for the IHS is to serve all members of federally recognized tribes; in practice, though, provision of such services takes place almost completely within reservation communities. Second, tribal programs and traditional healing services are mostly available within reservation communities. Given that the utilization of IHS, tribal, and traditional service options was a focus of the AI-SUPERPFP, the sampling frame was restricted to those living on or near the reservation, and, thus, individuals for whom such care is realistically available. At the same time, many tribal members reside in nearby border towns in order to take advantage of the greater economic opportunities there while remaining close to community life and families on the reservation. Thus, the survey included those living in such communities within 20 miles of the reservation as well.

AI-SUPERPFP chose a stratified random sampling strategy to account for the smaller number of older persons in the population. Even though we were working with some of the larger American Indian tribes in the U.S., ensuring sufficient sample sizes

was problematic; as a result, for the Northern Plains sample, two closely related tribes were combined. The persons listed in the pooled Northern Plains tribes and the Southwest tribe were each divided into eight mutually exclusive groups: men and women between ages 15 and 24, 25 and 34, 35 and 44, and 45 and 54 with the current age calculated based on the anticipated start of the Northern Plains (June 1, 1997) and Southwest (October 6, 1997) data collections. Individuals in each stratum were then randomly assigned to replicates, or groups, of 25 persons. Essentially forming random mini-samples, replicates were differentially released across field offices as the team gained clarity about the proportion of those listed on the rolls who were still living on/near their respective reservations and the response rates of those located and found to be eligible. In the end, 37 replicates were released in one Northern Plains field office and 20 in the other, and 19 and 24 were released in the two Southwest field offices. In data analyses, the derivation and use of sample and nonresponse weights for each age/gender/field office stratum allow conclusions to be drawn for the full population of inference.

Once a replicate was chosen, the CAIANH's next task was to determine who among those selected met the eligibility criteria. The team distinguished between two types of ineligible respondents. First, individuals were considered ineligible to participate in the study if their primary residence was outside of the designated area (that is, farther than 20 miles from the reservation), if they were physically or mentally unable to participate, or if they were institutionalized off-reservation at the time of location. Second, individuals for whom no or inconsistent information about their whereabouts was available were deemed cannot locates, and thus ineligible. This designation was applied only after extensive location efforts, and then only by supervisory staff. CAIANH

used national telephone and location databases to locate these people; however, the team found that such resources were seldom helpful, since American Indians living in poverty are often highly mobile and frequently do not have telephones (Snipp, 1996). We could not be sure that such cannot locates were truly ineligible. But we ultimately concluded that if residential eligibility was unknown after extensive location efforts, that person likely did not live on or near the reservation. It should be noted that for most cannot locates, at least one person was found who knew the potential respondent, knew they were living elsewhere, but was not sure where.

Data were collected between 1997 and 1999; thus, some sample members had reached 57 years at the time of interview, and fewer sample members were 15. A replicate strategy was used in which random groupings of names were released in sequence for location until the target sample size (about 1,500 per tribe) was reached. Overall 39.5% and 46.5% of the Southwest and Northern Plains tribal members were found to be living on or near their reservations. Once located and found eligible, 73.7 percent agreed to participate from the Southwest (n = 1,446) and 76 percent from the Northern Plains (n = 1,638).

Instrumentation and Measurement

The AI-SUPERPFP interview consisted of a series of modules; those of interest to the dissertation analysis asked about demographics, measures of physical health, health-related quality of life, stress, important psychosocial constructs (such as social support and coping), religio-spiritual beliefs and measurement of psychological distress through the Kessler 6. Tribal members conducted all interviews after intensive training in research and interviewing procedures. Informed consent was obtained from all

participants; for minors, parental/guardian consent was acquired before adolescent assent. Tribal approvals were obtained prior to project implementation. As the CAIANH began data collection in 1997, the respective tribal councils passed resolutions approving the project, signed by the tribal chair or president or his approved signatory. Questions were administered using a computer-assisted personal interview. Extensive quality control procedures verified that all portions of location, recruitment, and interview procedures were conducted in a standardized, reliable manner. The protocol, the training manual, and full codebook are available on the CAIANH website.[4]

In an effort to prevent future conflict or misuse of the data, the CAIANH has a Data Access Committee (DAC). Individuals and groups interested in access to one or more of the databases at the CAIANH must make an application to the CAIANH's DAC. This dissertation project has been approved by the DAC and was permitted use of the AI-SUPERPFP database. See Appendix A for the codebook of variables allowed from the CAIANH.

All analysis was conducted stratified by tribe and age. The analysis is separated by tribe—Northern Plains tribe and Southwest tribe. It is stratified by tribe because each tribe belongs to different linguistic families, have different histories of migration, subscribe to different principles for reckoning kinship and residence, and have historically pursued different forms of subsistence. The analysis is also separated by age. The first set of analyses looks at the adults of each tribe. I define adults as ages 20 years and older. The second set of analysis looks at young adults ages 15–19 years. The young adults have been separated from the adults in the analysis because the physical and psychological development of each group is quite different and thus, difficult to compare

[4] http://www.ucdenver.edu/academics/colleges/PublicHealth/research/centers/CAIANH/Pages/default.aspx

as equals. Also, not all of the young adults have reached legal age for the substance-use analysis, which includes tobacco use and alcohol use.

Demographic Variables

All of the following variables and variable creations were used similarly for both the Northern Plains tribe and the Southwest tribe:

Age

The 20 year-old and older analysis has ages separated into three categories. The categories are as follows: category 1 is 40 years and older, 2 is 25 years-old to 39 years-old, and 3 is 20 years-old to 24 years-old. The reference category is the 40 year-old and older group.

Gender and Marital Status

For the gender and marital status variables, I kept the variable coding that the CAIANH team prepared. For gender, the participant's gender is code as female equals 1 and male equals 0. I also used the CAIANH team's condensed marital status variable where married is the reference category followed by individuals who are either separated, widowed, or divorced, and finally, individuals who have never been married.

Education

The CAIANH team initially calculated each participant's education level or highest grade attended. I recoded the six pre-existing education levels into four education levels. The reference category is made up of individuals who are college graduates or have a graduate or professional school degree. The next category is made up of individuals who attended 1–3 years of college but did not graduate from college and it also includes individuals who have 1–4 years of vocational school. The third category is

made up of individuals who earned their high school diploma. The final category is made up of individuals who have no schooling or complete high school through 11th grade (no high school diploma).

Income

The CAIANH team initially calculated the household income from the household income before taxes in 1996 into ten mid-point income categories (possible values are: 0, 500, 3000, 7500, 12500, 17500, 25000, 35000, 45000, 60000). For this dissertation, I recoded the ten mid-point categories into four collapsed categories plus a missing category for non-responses. The reference category is the highest income category—$60,000. The next category is $35,000 to $45,000 income category. The fourth category is $0 to $17,500 income per year. Finally, a missing variable was created for any household that did not respond to the question.

Employment Status

I utilized the tri-level employment status created by the CAIANH team. The reference category is the student, which was separated out in the employment status. The second category is the employed individuals and followed by the unemployed individuals.

Mobility Variables

The mobility variables used in this dissertation are measures that gauge childhood stability and lifetime residence. The childhood-stability measures look at the number of houses and the number of times a participant changed schools between ages 6 and 16. The two childhood-stability variables are recoded into dichotomous variables. If the

participant lived in 4 or more houses, the participant was coded as 1. If the participant attended 4 or more schools between ages 6 and 16, the participant was coded 1.

The lifetime residence looks at the location the participant lived most of their life. For my dissertation analysis, I collapsed the four categories into three categories of residence. The reference category is made up of individuals who lived all of their life on the reservation. The second category is a collapsed category of people who lived mostly on reservation and people who lived mostly near the reservation. The final category is made up of individuals who lived mostly off the reservation.

Ethnic Identity Variables

In this dissertation, I use four variables to independently represent aspects of tribal ethnic identity. Two of the tribal ethnic identity variables pertain to language use; the first variable refers to personal ability and the second to childhood household use. The remaining tribal ethnic identity variables reference the importance of maintaining tribal identity through tribal values and practices at both the personal level and immediate family level. Each of the measures is a four point Likert scale. I recoded each variable into a dichotomous variable to compare the lowest measure to all others. The dichotomous variable allows the analysis to differentiate individuals who have not invested in their tribal identity from those who have invested any of their time in maintaining their tribal ethnic identity.

The first ethnic identity variable concerns the individual's ability to speak their tribal language. The question is, "How well do you speak your tribal language?" with a Likert scale response as follows: I don't speak my tribal language (0), I speak it a little, but not very well (1), I speak it moderately well (2), and I speak my tribal language very

well (3). The individual ability to speak the tribal language Likert scale is recoded to "I don't speak my tribal language" versus individuals who can speak any amount of their tribal language.

The second ethnic identity variable concerns the individual's childhood exposure to the use of their tribal language. The question is "How much was [your tribal language] spoken in your house when you were growing up?" with a Likert scale response as follows: Not at All (0), A Little (1), A Lot (2), and Most or All of the Time (3). The childhood household use of the tribal language Likert scale is recoded to "Not at All [Spoken]" versus individuals who heared any amount of their tribal language in their childhood household.

The third ethnic identity variable concerns the individual's personal maintenance of their tribal identity. The question is "How important is it to you that you maintain your tribal identity, and your tribes' values and practices?" with a Likert scale response as follows: Not at All (0), A Little (1), Some What (2), and Very Much (3). The personal maintenance of tribal identity Likert scale is recoded to "Not at All [Maintained]" versus individuals who have some level of importance to maintaining tribal identity, and tribal values and practices.

The fourth ethnic identity variable concerns the immediate family's maintenance of their tribal identity, tribal values, and tribal practices. The question is "How important is it to you that members of your immediate family maintain your tribe's identities, values, and practices?" with a Likert scale response as follows: Not at All (0), A Little (1), Some What (2), and Very Much (3). The familial maintenance of tribal identity Likert

scale is recoded to "Not at All [Maintained]" versus families who have some level of importance to maintaining tribal identity, and tribal values and practices.

Religiospiritual Beliefs

AI-SUPERPFP asked about salience of beliefs associated with specific religiospiritual traditions. During the instrument development phase, researchers sought assistance from focus groups conducted with each tribe. Thus, the AI-SUPERPFP survey questions named each tradition individually and asked: "How important are these beliefs to you?" Possible responses included "very important," "somewhat important," and "not at all important." Notably, these measures did not force the choice of a single religiospiritual "preference" or "affiliation." Instead, they served the AI-SUPERPFP interest in assessing prevalence of specific beliefs and their salience, along with overlap in beliefs from different traditions. This process created the cultural spirituality scale score variable, ranging from 0 to 1. The higher the score the greater was the participant's spirituality based on items/beliefs associated with the tribes investigated.

In "Religiosity and Spiritual Engagement in Two American Indian Populations," Garroutte and colleagues' (2009) findings suggest a degree of overlap among belief systems. Religious nonexclusivity, or the designation of multiple religious beliefs as "very important," was common. Among Northern Plains participants who identified at least one religion as very important, more than one-fourth (28%) described two or more sets of beliefs in this way, while the number in the Southwest rose to more than one-third (38%) (Garroutte, et al., 2009). At the same time, substantial subgroups—especially of Christians and respondents in the Southwest—reported religious exclusivity, saying that they did not combine beliefs. Garroutte and colleagues' overall findings suggest a portrait

of the country's largest Indian reservations as sites of considerable religiospiritual diversity - settings where a multiplicity of beliefs are highly salient and often in rich combination.

Since Garroutte and colleague's findings suggest that American Indians typically have overlap among beliefs systems and also have high salience of beliefs, I chose to use the cultural spirituality (salience) variable instead of examining individual belief systems. Also, religious salience tends to have a beneficial affect on individual mental health over religious affiliation (Koenig, 1998). In the dissertation analysis, the interval variable cultural spirituality is recoded into a dichotomous variable of strongest salience to the participant's spiritual beliefs.

Social Support Variables

I examine four measures of social support. The four measures are perceived social support, negative social support, instrumental social support, and isolation. Measures of social support are particularly important because positive social support helps alleviate demoralization (Clarke & Kissane, 2002; de Figueiredo, 1993).

The perceived social support measure is created from six questions and the score ranges from 1–3. The higher the score the greater the social support is perceived by the participant. Each question has a Likert scale of not at all, some, and a lot. The questions are as follows: How much do your friends or relatives really care about you?; How much do they understand the way you feel about things?; How much do they appreciate you?; How much can you rely on them for help if you have a serious problem?; How much can you talk to them about your worries?; and How much can you relax and be yourself

around them? For the dissertation analysis, the perceived social support is converted to a dichotomous variable for the highest possible perceived social support.

The negative social support variable is created from six questions with a Likert scale of never, sometimes, and often. The higher the score the greater the negative "support" is reported by the participant. The six questions used are as follows: How often do your friends or relatives make too many demands on you?; How often do they argue with you?; How often do they criticize you?; How often do they let you down when you are counting on them?; How often do they get on your nerves?; and How often do they drink or use drugs too much? For the dissertation analysis, the negative social support scale score is converted to a dichotomous variable for the top 30% who reported the highest levels of negative social support.

The instrumental social support measure is created from five yes or no questions. The higher the score the greater the instrumental support reported by the participant with a continuous score from 0-1. Each participant was asked the following five questions: Among the people you know, is there someone: 1) you can go with to play cards, or go to bingo, a powwow, or a community meeting, 2) who would lend you money if you needed it in an emergency, 3) who would lend you a car or drive you somewhere else if you really needed it, 4) you could call who would bail you out if you were arrested and put in jail, and 5) you could count on to check in on you regularly. For the dissertation analysis, the instrumental social support is converted to a dichotomous variable for the highest possible instrumental social support.

The social isolation measure is created from three questions with a three point Likert scale. The higher the score the greater the isolation is perceived by the participant.

The following three questions are used for the social isolation measure: How isolated do you feel?; How often do you purposely avoid family gatherings?; and of those family gatherings you go to, how likely are you to leave early? For the dissertation analysis, the isolation social support scale score is converted to a dichotomous variable for the top 30% who reported the highest isolation from social support.

Stress and Stressful Events Variables

In the dissertation analysis, I use three measures of stress and stressful events. Each of the variables is a count of stressful occurrences in the participant's life. I created a dichotomous variable of having an occurrence of any stressful event versus no stressful events. Individuals who experience a stressful event in their life are more likely to be demoralized (Clarke & Kissane, 2002).

The first variable measures the number of lifetime events. The number of lifetime events experienced by participants is computed from twenty-seven variables with a count, possible range: 0–27. A few examples of the questions used in the lifetime event measures are as follows: Were you ever placed in foster care?; Did you ever fail school or a training program, or drop out of school?; Did you ever have a serious illness?; and did your family participate in the BIA location program?

The second variable measures the number of recent events experienced by a participant as computed from twenty-two variables. If the respondent experienced the event, it is added to the count, possible range 0–22. A few examples of the recent events asked of participants are as follows: Did you move your household?; Was your house or car broken into?; Did anyone close to you have an unexpected or unwanted pregnancy?; and did you or someone close to you have a major financial crisis?

The third measure of stress or stressful events counts the number of traumatic events experienced by the participant from sixteen questions. Some examples of questions asked of the respondents involving unusual events that are *extremely* stressful or disturbing, things that do not happen to most people, are as follows: Were you ever in a disaster—for example, a flood or flash flood, tornado, fire, drought, or explosion?; Have you ever had direct combat experience in a war?; Were you ever physically abused or hurt by your parent or a caregiver?; and have you ever witnessed someone else being raped, or badly injured or killed?

Attitudes toward Mental Health Care

The attitude toward mental heath care variable is complied from six measures that gauge the respondents attitude toward people who specialize in counseling, such as psychiatrists, psychologists, social workers, and counselors. The six questions are made into a single dichotomous variable, which illustrates the respondent's positive attitude toward mental health care and utilization. The six questions used are as follows: If you have a serious emotional problem would you go for help to one of these people, [psychiatrists, psychologists, social workers, and counselors]?; How comfortable would you feel talking about emotional problems or personal problems with a mental health professional?; When people have emotional or personal problems, how many of them do you think would be helped by talking to a mental health counselor?; When people have emotional or personal problems, how many of them do you think would get better without talking to a mental health counselor?; Do you think a mental health professional would understand the kinds of problems you might have?; and could you talk about your

most personal problems with a mental health professional? All questions are coded positively, so that if the participant has a positive attitude toward mental health care professionals they are coded 1 and all others 0. I also created a missing variable for any participant who did not answer the attitude toward mental health care questions. It allows the analysis to not lose participants and allows for determining whether those who did not answer the questions are significantly different than those who answered the questions.

Utilized Mental Health Support

The participant answered questions about the occurrence of any personal problem or emotional problem and whether the participant spoke to someone about the problem in the past year. I used four questions to create a dichotomous variable to see if the participant spoke to anyone about a personal problem or emotional problem in the past year. The first question asks if the participant spoke to a friend or family member about their personal problem or emotional problem. The second question asks if the participant spoke to a mental health specialist who specializes in counseling like a psychologist, a psychiatrist, a counseling social worker, a substance abuse counselor, a school counselor, a mental health technician, or some other kind of counselor in the past year. The third question asks the participant if she spoke to a medical person about her emotional or personal problems in the past year. The final question asks the participant if he spoke to a healer, or spiritual or religious leader about your emotional or personal problems. In this dissertation, I created one single dichotomous variable from all four to indicate whether the participant spoke to any or all of the four types of people about an emotional or

personal problem in the past year.

Traditional Healer/Medicine Man

Native American people often utilize both Western medicine resources as well as traditional tribal medicine resources to address any physical or mental health issues (Kim and Kwok, 1998; Marbella et al., 1998). In the dissertation analysis, I am interested in whether the participant has utilized a medicine man, traditional healer, or had a ceremony in the past year for help with a physical health problem, a drug or alcohol problem, or an emotional problem. I have one dichotomous variable that indicates whether an individual has utilized a traditional medicine resource for a personal problem.

Tobacco Use

Individuals who use tobacco use often experience a co-occurrence with experience of depression (Coveya, Glassmana, & Stetnera, 1998; Lenz, 2004). Thus, in the dissertation analysis, I have variables for individuals who currently smoke cigarettes and individuals who currently use chewing tobacco. I also have a missing variable for each for individuals who did not answer the cigarette-use or chewing tobacco-use questions.

Alcohol Use

Alcohol use and abuse may be a result of self-medication to reduce symptoms of anxiety (Quitkin, Rifkin, Kaplan, & Klein, 1972). In this dissertation, I use three levels of alcohol use as created by the AI-SUPERPFP team. The first indicates whether an individual drank alcohol more than one day in the past month. The second indicates whether an individual has gotten drunk during the past month. The third indicates whether an individual has gone on a binge of drinking or a drinking spree where the individual stayed drunk for two whole days or more.

Indian Health Service Utilization

The dissertation analysis uses the following question to indicate whether a respondent has used Indian Health Service in the past year. The question is, "In the past year, that is, the 12 months prior to this interview, have you ever gone to the Indian Health Service for health care of any kind? This includes help with a physical health problem, a drug or alcohol problem, or an emotional problem."

Physical Health Conditions

Mental health problems and physical health problems often co-occur. The dissertation analysis uses two measures of physical health problems. The first is an occurrence of self-reported physical health problems reported as having occurred in the past year. The second is an occurrence of physical health problems reported as having ever occurred in lifetime that were also diagnosed by a doctor.

Self-Rated Health

One of the dependent variables in the dissertation analysis is self-rated health. The following question is asked of respondents: In general, would you say your health is 1) Excellent, 2) Very Good, 3) Good, 4) Fair, or 5) Poor. For the analysis, the Likert scale question is recoded to a dichotomous variable of fair/poor health versus all others.

Kessler High Distress Scale

The mean of the six Kessler high distress scale (Kessler 6), which is calculated by the AI-SUPERPFP team, is used as the indicator of mental health in this dissertation. The strength of using the Kessler 6 is the fact that it does not measure clinical diagnosis of psychological state, but rather gauges the general experience of feelings of depression and anxiety. The Kessler 6 asks respondents to think over the past 30 days and answer six questions regarding psychological distress. Mitchell and Beals (2010) findings suggest

that among AI-SUPERPFP samples, the Kessler 6 can function as a general indicator of possible psychiatric diagnosis. Mitchell and Beal (2010) also argue that the Kessler 6 appears to provide information about the severity of distress and individual's distress that is unique beyond mood, substance, and physical disorders. In the dissertation analysis, I calculate the top 15% highest Kessler score to indicate the individuals with the highest psychological distress. In all analyses with the Kessler 6, I found that the top 15% experience of psychological distress was the appropriate sensitivity for the independent variables in each model.

I also conduct a decomposition analysis of the Kessler 6. I separate the anxiety questions from the depression questions in the following way: Depression questions include, How often did you feel so sad nothing could cheer you up?; How often did you feel hopeless?; and how often did you feel worthless?; Anxiety questions include, How often did you feel nervous?; How often did you feel restless or fidgety?; How often did you feel that everything was an effort?; Once the anxiety and depression questions were separated, I determined the top 15% highest anxiety and depression score to indicate the individuals with the highest experience of anxiety and depression, respectively. In all analyses with decomposed anxiety and depression questions, I found that the top 15% experience of either anxiety or depression was the appropriate sensitivity for the independent variables in each model.

Statistical Methods

Variable recoding and descriptive analysis was completed using Stata (Stata, 2009). All inferential analyses were also conducted in Stata using sample and nonresponse weights (Cochran, 1977). In multivariate analyses, logistic regression methods (Long and Freese, 2003) allowed for simultaneous investigation of the

relationships of demographic and social variables to Kessler's measure of psychological distress, as well as the participant's self-rated health. The logistic regression model command code took into account the survey design effects in the AI-SUPERPFP sample study. Unfortunately, Stata does not provide log-likelihood values (or variants) when the complex weightings are used. In Stata this is not generally a maximum likelihood solution; thus Stata cannot legitimately report any log-likelihood values or any variants of it such as the pseudo-R squared. However, this is not to say that the values cannot be obtained or that there is not a perfectly reasonable way to obtain the desired quantities. Stata merely needs to be manipulated into giving what the likelihood would be if the independence assumptions were not violated and were based on a standard estimation and the estimation results were known a priori. With the assistance of Dr. Daniel Powers of the University of Texas at Austin, Department of Sociology, I executed Stata command code to calculate the McFadden's R-squared along side each logistic regression model, thus giving the appropriate values to report the pseudo R-square. It is important to note that through calculating the McFadden's R-square independently from the weighted logistic regression model, it is possible to have a negative pseudo R-squared.

The McFadden's pseudo R-squared is calculated in Stata in the following manner: first, Stata computed the log-likelihood values from the null model, which is required for the McFadden's R-squared; second, Stata ran the logistic regression with survey design specifications and saved the linear predictor; third, Stata ran a logit model using the linear predictor as "offset." This "offset" forces the standard logit model to use the fitted values and data from the survey design specified logistic model and thus treating the logistic regression estimates as known; finally, Stata calculated the McFadden's R-squared. Each

pseudo R-squared reported in this dissertation is the above described calculated McFadden's R-squared.

Chapter Four: Psychological Distress Results

Chapter four is composed of three sections. The first section provides the study's descriptive statistics, including the mean income for each tribe. The second section presents the results for the Kessler 6. The third section reveals the decomposition results of the Kessler 6 anxiety and depression questions. It illustrates the analysis on the three anxiety questions and the analysis on the three depression questions. The separation of the Kessler measures is important because the different aspects of psychological distress may work equally in the well-being of each tribe. The analysis is focused on men and women of the ages 20 years to 57 years old of the Southwest and Northern Plains tribes.

Descriptive Results

A significantly greater percentage of the Southwest sample was female than in the Northern Plains sample. The AI-SUPERPFP team conducted a review of location records, which indicated that the gender difference was largely due to the migration of Southwest men to off-reservation communities for employment. Results revealed demographic differences that followed expected patterns. Women in both tribes were more likely than their male counterparts to have education beyond high school, and Southwest women were more likely than Northern Plains men to be married. The average household income for the pooled men and women of the Southwest tribe is $22,446 and $15,626 for the men and women of the Northern Plains tribe. Among both tribes, the most frequent level of education is high school diploma. Also, among the participants, age 20 years to 57 years old the mean number of years spent on the reservation is approximately 30 years. The details of the descriptive statistics can be viewed in Appendix B and the details of the crosstab Chi-square analysis between the Kessler 6

score, Anxiety 3 score and Depression 3 score with each independent variable can be viewed in Appendix C.

Study Hypotheses

The following research hypotheses guide this dissertation study as well as the logistic regressions and their interpretation. The research hypotheses are as follows:

1. Living on the reservation will be protective against the experience of demoralization (high psychological distress) because of accessibility to tribal support networks.
2. Individuals with a strong tribal ethnic identity will be less likely to be demoralized.
3. Tribal spiritual beliefs are protective against psychological distress for the individuals who strongly associate themselves with their beliefs.
4. Both Southwest and Northern Plains tribe members who perceive high levels of positive social support will be less likely to be demoralized.
5. Substance use will increase the individual's likelihood to experience elevated psychological distress.

Kessler 6 Regression Results

Northern Plains Tribe

Table 4 shows the logistic regression analysis predicting whether an individual has a top 15% highest score of the Kessler 6 psychological distress scale among men and women of the Northern Plains Tribe. Model I includes the following basic demographic control variables: age, gender, marital status, education, income, employment status, and

location of lifetime residence. Table 4 shows only odds ratios with statistically significant findings on one of the seven models among one of the two tribes. In model I, both of the younger age groups are less likely to have a high Kessler 6 score than the individuals in the 40 years and older age groups by 26% ($p<0.10$) for ages 25-39 years and 53% ($p<0.01$) for ages 20-24 years. Education also has a significant effect on predicting the highest 15% Kessler score. Individuals without a high school diploma are two times [Odds Ratio (OR)= 2.27; $p<0.05$] more likely to have a high psychological distress score compared to individuals with a college degree. Finally, in model I, individuals who have lived mostly on or near the reservation are 36% ($p<0.10$) more likely than individuals who lived their entire life on the reservation to have a top 15% high Kessler score. Hypothesis one predicts that Northern Plains tribal members who live on the reservation will have lower demoralization. The finding in the first model that those who live mostly on or near the reservation have higher psychological distress than the tribal members who live their entire lives on the reservation suggests some support for hypothesis one.

Model II of table 4 has the basic demographic variables plus childhood stability variables and tribal identity variables. Model II has the following childhood stability variables: 1) individuals who lived in four or more houses during their childhood and 2) individuals who attended four or more schools throughout their childhood. The tribal identity variables include individuals who can speak their tribal native language, individuals who had their native language spoken in their childhood household, individuals who maintain that their [tribe's] values and practices, and individuals whose immediate family's maintain [tribal] values and practices.

The results of model II are similar to model I except that the age group 25-39 is no longer statistically significant and the marital status category becomes significant. Individuals who have never been married are 41% more likely (OR=1.41; p<0.10) to have a high psychological distress score (i.e., scored in the top 15%) than individuals who are married. None of the childhood stability variables or tribal identity variables were statistically significant and the odds ratio values are not presented in table 4. Hypothesis two predicts that tribal ethnic identity will have a protective effect against high demoralization. Unfortunately, there is no statistical difference between different levels of ethnic identity in model II; thus, it does not lend support to hypothesis two.

Model III incorporates the religiospiritual variable, social support variables, and the variables measuring the occurrence of a stressful event. Individuals in age group 20-24-years old continue to be about half as likely as individuals in the 40 years old and older age category to have high psychological distress (OR=0.54; $p<0.05$). Individuals who have never married are 49% (OR=1.49; $p<0.10$) more likely to have a high psychological distress score than individuals who are married. The education variables are no longer statistically significant. Income variables do become significant and suggest that any individual in a household that makes less than $60,000 per year is 3 to 4 times more likely to have a high psychological distress score (income $35,000-$45,000: OR=3.943; $p<0.10$ and income less than $17,500: OR= 4.11; $p<0.10$). Concerning the religiospiritual variable, the cultural-spirituality scale score illustrates the strength of the participant's spirituality based on item and beliefs asked associated with the tribes investigated.

Table 4. Logistic Regression Results Psychological Distress ~ *Northern Plains Tribe*

	Predicting top 15% high Kessler Psychological Distress Score among Northern Plains tribe						
	Model I Odds Ratios	Model II Odds Ratios	Model III Odds Ratios	Model IV Odds Ratios	Model V Odds Ratios	Model VI Odds Ratios	Model VII Odds Ratios
Age [1]							
25-39 years	0.73 +	0.74	0.76	0.64 *	0.76	0.74	0.74
	(0.13)	(0.14)	(0.15)	(0.14)	(0.17)	(0.17)	(0.17)
20-24 years	0.47 **	0.45 **	0.54 *	0.53 *	0.66	0.63	0.68
	(0.12)	(0.13)	(0.17)	(0.17)	(0.22)	(0.21)	(0.23)
Marital Status [2]							
Separated, Divorced, Widowed	1.22	1.24	1.36	1.43	1.40	1.39	1.39
	(0.26)	(0.27)	(0.32)	(0.34)	(0.34)	(0.35)	(0.34)
Never Married	1.38	1.41 +	1.48 +	1.38	1.37	1.36	1.37
	(0.28)	(0.29)	(0.33)	(0.31)	(0.33)	(0.32)	(0.33)
Education [3]							
Some College	1.28	1.28	1.28	1.61	1.49	1.57	1.64
	(0.47)	(0.48)	(0.51)	(0.69)	(0.68)	(0.75)	(0.79)
High School Diploma	1.06	1.02	1.08	1.33	1.14	1.17	1.29
	(0.38)	(0.37)	(0.41)	(0.55)	(0.52)	(0.55)	(0.60)
Less than High School	2.27 *	2.20 *	1.99	2.91 *	2.08	2.21	2.23
	(0.88)	(0.86)	(0.84)	(1.31)	(1.01)	(1.10)	(1.13)
Income [4]							
$35,000-$45,000	2.02	2.01	3.92 +	3.99 +	3.32	3.09	3.09
	(1.37)	(1.37)	(3.16)	(3.23)	(2.57)	(2.30)	(2.37)
$25,000	2.12	2.08	3.64	3.81	3.34	2.97	2.99
	(1.45)	(1.43)	(2.98)	(3.14)	(2.65)	(2.29)	(2.36)
Less than $17,500	2.72	2.73	4.11 +	4.18 +	3.29	3.02	2.95
	(1.74)	(1.77)	(3.16)	(3.23)	(2.43)	(2.15)	(2.15)
Missing	1.24	1.19	1.30	1.14	1.31	1.26	1.36
	(0.35)	(0.34)	(0.44)	(0.38)	(0.43)	(0.42)	(0.45)
Lifetime Residence [5]							
Mostly on or Near Reservation	1.36 +	1.34 +	1.12	1.12	1.10	1.11	1.12
	(0.24)	(0.23)	(0.22)	(0.23)	(0.23)	(0.23)	(0.23)
Mostly off the Reservation	1.21	1.16	1.17	1.25	1.10	1.15	1.14
	(0.40)	(0.39)	(0.46)	(0.51)	(0.48)	(0.52)	(0.52)
Cultural spirituality scale score							
Highest Score (1)			0.64 *	0.61 *	0.66 +	0.68 +	0.68 +
			(0.14)	(0.13)	(0.15)	(0.16)	(0.16)
Social Support							
Perceived Social Support			0.29 **	0.31 **	0.33 **	0.34 **	0.34 **
			(0.08)	(0.09)	(0.10)	(0.10)	(0.10)
Negative Social Support			1.66 **	1.71 **	1.76 **	1.71 *	1.68 *
			(0.32)	(0.34)	(0.36)	(0.36)	(0.35)
Instrumental Social Support			0.82	0.79	0.86	0.88	0.88
			(0.17)	(0.17)	(0.18)	(0.19)	(0.19)
Isolated			3.66 **	3.89 **	3.53 **	3.57 **	3.51 **
			(0.69)	(0.76)	(0.72)	(0.74)	(0.72)
Occurrence of Traumatic Event			1.92 **	1.90 **	1.76 *	1.82 *	1.72 *
			(0.45)	(0.45)	(0.44)	(0.46)	(0.42)
Mental Health Service Utilization in past year				1.64 *	1.60 *	1.63 *	1.60 *
				(0.33)	(0.32)	(0.32)	(0.32)
Substance Use							
In last 30 day, smoked cigarette				0.83	0.79	0.79	0.76
				(0.21)	(0.20)	(0.20)	(0.19)
Missing				1.05	1.03	1.07	1.11
				(0.29)	(0.29)	(0.30)	(0.31)
In last 30 days, used chewing tobacco				1.40	1.33	1.34	1.35
				(0.47)	(0.46)	(0.47)	(0.47)
Missing				0.73	0.76	0.80	0.78
				(0.16)	(0.18)	(0.19)	(0.18)
Drank alcohol in past month					1.49		
					(0.36)		
Got Drunk alcohol in past month						2.20 **	
						(0.51)	
Went on Drinking Spree in past month							1.87 +
							(0.71)
Missing					1.44	1.47	0.70
					(0.41)	(0.37)	(0.20)
Occurrence of at least 1 Self-Reported Physical Health Problem					1.24	1.18	1.10
					(0.47)	(0.45)	(0.43)
Occurrence of at least 1 health limitation					1.62 *	1.69 *	1.66 *
					(0.33)	(0.35)	(0.34)
Self-Reported Health to be Poor or Fair					2.11 **	1.99 **	1.98 **
					(0.46)	(0.43)	(0.43)
Log Likelihood	-568.76	-560.71	-463.38	-443.69	-427.27	-422.39	-421.43
Psuedo R-Squared	0.05	0.07	0.23	0.26	0.29	0.30	0.30
N	1,237	1,222	1,204	1,187	1,186	1,186	1,186

Note: + p < 0.10, * p < 0.05, ** p < 0.01

[1]Reference Category (RC): 40+ years; [2]RC: Married; [3]RC: College Degree; [4]RC: $60,000; [5]RC: All of life on Reservation;

Within model III, individuals who have a strong adherence to their religious and/or spiritual beliefs are 36% less likely to have a high psychological distress score than those with a weak sense of religious or spiritual beliefs (OR=0.64; $p<0.05$). The religiospiritual findings lend support to hypothesis three, where individuals with high adherence to spiritual beliefs will have lower demoralization.

In regard to the social support variables, individuals who perceive high levels of positive social support, such as feeling loved and appreciated are almost 70% less likely to have high psychological distress then those with low levels of perceived positive support (OR=0.29; $p<0.01$). Individuals who perceive high levels of negative social support are nearly two times more likely to be in the top 15% psychological distress level than those with low levels of negative social support (OR=1.71; $p<0.01$). Notably, individuals who perceive being isolated from social support have the highest odds ratio estimate for psychological distress. Isolated individuals are over three and a half times more likely to have a high psychological distress score than individuals who do not feel socially isolated (OR=3.66; $p<0.01$). Both the strength of negative social support and isolation to increase the likelihood of psychological distress and perceived positive support to lower the likelihood of distress lend support to hypothesis four. Finally, concerning the occurrence of a stressful event, individuals who have experienced at least one traumatic event during their life are nearly two times more likely to experience high psychological distress (OR=1.92; $p<0.05$).

Model IV is similar to the previous three but with the addition of independent control variables. The variables measure attitudes toward any mental health professional, utilization of mental health professional in past year, utilization of a medicine man, traditional healer, or participation in a ceremony performed for participant's health and well-being, and cigarette and chewing tobacco use. The results of the model are similar to the previous three models. The two younger age groups are about half as likely to have high psychological distress (OR=0.64, $p<0.05$; OR=0.53, $p<0.05$). Individuals who do not have a high school diploma are almost three times more likely to have a high Kessler score than individuals with a college degree (OR=2.91, $p<0.05$). Households that have lower than $60,000 per year are four times more likely to be in the top 15% Kessler score (OR=3.99, $p<0.10$; OR=4.18, $p<0.10$). Individuals with a stronger affiliation with cultural spirituality continue to have a 39% lower likelihood of psychological distress than those without strong affiliation with their religious/spiritual beliefs (OR=0.61, $p<0.05$), and individuals with high levels of social support are 31% less likely to have a score in the top 15% of Kessler 6 score (OR=0.31, $p<0.01$). The items that increase likelihood of having a top Kessler score are feeling socially isolated and having experienced a traumatic event (OR=3.89, $p<0.01$; OR=1.90, $p<0.05$). The last significant variable in model IV on Table 4 asks whether the participant has spoken to anyone about a personal or emotion problem in the past year. If the respondent did speak to someone about a personal or emotional problem, they are 64% more likely to have scored highly on the Kessler 6 psychological distress scale then those respondents who did not speak to anyone about a personal or emotional problem (OR=1.64, $p<0.05$). As this counterintuitive result demonstrates, it is important not to assume causality between

variables. Since this is a cross-sectional study, it stands to reason that individuals with the highest psychological distress are those who are currently speaking to someone about an emotional or personal problem; and the variable that better measures long-term benefits of social support would be the following social support variable findings. Finally, the other variables mentioned above—i.e., utilization of IHS, etc.,—were not statistically significant.

Models V through VII in Table 4 detail the logistic regression of psychological distress on the basic demographic characteristics and adds alcohol use variables, sources of physical limitations, and self-rated health. In the remaining three models, the demographic characteristic variables no longer have a statistically significant effect on predicting whether a participant has a top 15% psychological distress score. Across the remaining three models, individuals with a strong sense of cultural spirituality are about 30% less likely to have high psychological distress than those with low levels of cultural spirituality and individuals who perceive high levels of positive social support are 66% less likely to have a high Kessler 6 score than those who do not perceive positive social support. The individuals who are more likely to have a high Kessler score are those who feel socially isolated, have experienced a traumatic event, and have sought out someone to speak about a personal or emotion problem. In model V, the individuals who drank at least a single alcoholic drink on one or more days are not statistically different from those who did not consume any alcohol in the past 30 days. In model VI, individuals who got drunk during the past 30 days are two times more likely to have high psychological distress than individuals who did not get drunk during the past 30 days (OR=2.20, $p<0.01$). In model VII, individuals who went on a day or more drinking spree are nearly

two times more likely to have top 15% Kessler 6 score than those who have not been on a drinking spree (OR=1.87, $p<0.10$). The newly significant variables in models V to VII are those measuring the existence of a physical limitation and those individuals who rate their own health to be "Fair or Poor." Individuals who have one or more physical limitations are 62% more likely to experience high psychological distress. Also, individuals who rate their health to be fair or poor are two times more likely to have a high Kessler 6 score (Model VII: OR=1.98, $p<0.01$). Severe drinking seems to increase the likelihood of psychological distress and thus suggests support for hypothesis five that substance use will increase the likelihood of a person being demoralized.

Southwest Tribe

Table 5 shows the odds ratios of statistically significant findings for the seven models among the second tribe. Table 5 shows the logistic regression analysis predicting whether an individual has score in the top 15% of the Kessler 6 psychological distress scale among men and women of the Southwest Tribe. Model I includes the following independent variables: age, gender, marital status, education, income, employment status, and location of lifetime residence.

Model II has the basic demographic variables, plus childhood stability variables and tribal identity variables. Model II has the following childhood stability variables: 1) individuals who lived in four or more houses during their childhood and 2) individuals who attended four or more schools throughout their childhood.

Table 5. Logistic Regression Results for Psychological Distress ~ *Southwest Tribe*

Predicting top 15% high Kessler Psychological Distress Score among Southwest tribe	Model I Odds Ratios	Model II Odds Ratios	Model III Odds Ratios	Model IV Odds Ratios	Model V Odds Ratios	Model VI Odds Ratios	Model VII Odds Ratios
Age [1]							
25-39 years	0.89	0.92	0.93	0.80	0.94	0.95	0.95
	(0.19)	(0.20)	(0.21)	(0.20)	(0.24)	(0.25)	(0.25)
20-24 years	0.78	0.82	0.89	0.85	1.15	1.16	1.16
	(0.23)	(0.25)	(0.29)	(0.27)	(0.40)	(0.40)	(0.39)
Marital Status [2]							
Separated, Divorced, Widowed	1.26	1.28	1.20	1.07	1.01	0.98	0.98
	(0.33)	(0.33)	(0.32)	(0.29)	(0.29)	(0.28)	(0.28)
Never Married	1.46 +	1.47 +	1.44	1.40	1.42	1.35	1.35
	(0.32)	(0.32)	(0.34)	(0.34)	(0.37)	(0.35)	(0.35)
Education [3]							
Some College	1.32	1.31	1.14	1.24	1.14	1.16	1.16
	(0.75)	(0.75)	(0.66)	(0.67)	(0.64)	(0.66)	(0.65)
High School Diploma	2.16	2.14	1.73	1.80	1.68	1.67	1.66
	(1.23)	(1.23)	(1.02)	(0.96)	(0.93)	(0.94)	(0.93)
Less than High School	4.00 *	3.86 *	3.11 +	3.52 *	3.18 *	3.07 +	3.07 +
	(2.37)	(2.30)	(1.91)	(1.95)	(1.86)	(1.83)	(1.82)
Income [4]							
$35,000-$45,000	1.38	1.37	1.53	1.62	1.69	1.76	1.79
	(0.71)	(0.71)	(0.77)	(0.85)	(0.89)	(0.91)	(0.92)
$25,000	1.85	1.73	1.61	1.81	1.84	1.96	1.98
	(0.94)	(0.89)	(0.81)	(0.92)	(0.95)	(0.99)	(0.99)
Less than $17,500	2.47 +	2.45 +	2.12	2.45 +	2.00	2.08	2.12
	(1.17)	(1.17)	(0.99)	(1.14)	(0.96)	(0.98)	(0.99)
Missing	0.43 *	0.49 +	0.48	0.53	0.46	0.48	0.49
	(0.17)	(0.20)	(0.23)	(0.26)	(0.24)	(0.25)	(0.25)
Lifetime Residence [5]							
Mostly on or Near Reservation	0.76	0.75	0.63 *	0.66 +	0.67 +	0.68 +	0.68 +
	(0.14)	(0.14)	(0.13)	(0.14)	(0.15)	(0.15)	(0.15)
Mostly off the Reservation	0.80	0.88	0.64	0.71	0.81	0.81	0.81
	(0.39)	(0.43)	(0.32)	(0.40)	(0.47)	(0.49)	(0.49)
Cultural spirituality scale score							
Highest Score (1)			0.68 +	0.65 +	0.69	0.71	0.71
			(0.15)	(0.15)	(0.16)	(0.17)	(0.17)
Social Support							
Perceived Social Support			0.85	0.83	0.79	0.78	0.80
			(0.24)	(0.23)	(0.23)	(0.23)	(0.23)
Negative Social Support			2.06 **	2.00 **	1.87 **	1.90 **	1.89 **
			(0.42)	(0.43)	(0.40)	(0.41)	(0.41)
Instrumental Social Support			0.63 *	0.61 *	0.64 *	0.65 +	0.64 *
			(0.13)	(0.13)	(0.14)	(0.14)	(0.14)
Isolated			1.85 **	1.85 **	1.70 *	1.70 *	1.70 *
			(0.37)	(0.38)	(0.37)	(0.37)	(0.37)
Occurrence of Traumatic Event			1.18	1.13	1.09	1.07	1.06
			(0.26)	(0.26)	(0.26)	(0.26)	(0.25)
Mental Health Service Utilization in past year				1.40	1.42	1.37	1.36
				(0.29)	(0.30)	(0.30)	(0.30)
Substance Use							
In last 30 day, smoked cigarette				2.30 *	2.12 *	2.02 +	2.09 *
				(0.78)	(0.77)	(0.74)	(0.76)
Missing				1.40	1.54	1.53	1.57
				(0.39)	(0.45)	(0.45)	(0.45)
In last 30 days, used chewing tobacco				1.76 +	1.81 +	1.73 +	1.74 +
				(0.54)	(0.55)	(0.54)	(0.54)
Missing				0.94	1.01	1.02	1.03
				(0.25)	(0.27)	(0.28)	(0.28)
Drank alcohol in past month					1.12		
					(0.33)		
Got Drunk in past month						2.23 *	
						(0.84)	
Went on Drinking Spree in past month							0.68
							(0.47)
Missing					1.08	1.12	0.39 +
					(0.28)	(0.27)	(0.20)
Occurrence of at least 1 Self-Reported Physical Health Problem					2.46 **	2.45 **	2.43 **
					(0.84)	(0.84)	(0.84)
Occurrence of at least 1 health limitation					1.47	1.50 +	1.50 +
					(0.35)	(0.36)	(0.36)
Self-Reported Health to be Poor or Fair					2.57 **	2.49 **	2.52 **
					(0.60)	(0.59)	(0.60)
Log Likelihood	-431.00	-425.96	-385.18	-368.47	(349.74)	-347.78	-347.53
Pseudo R-Squared	0.11	0.12	0.20	0.24	0.28	0.28	0.28
N	1,097	1,087	1,055	1,042	1041.00	1,041	1,041

Note: † p < 0.10, * p < 0.05, ** p < 0.01

[1]Reference Category (RC): 40+ years; [2]RC: Married; [3]RC: College Degree; [4]RC: $60,000; [5]RC: All of life on Reservation;

The tribal identity variables include individuals who can speak their tribal native language, individuals who had their native language spoken in their childhood household, individuals who maintain that their [tribe's] values and practices, and individuals whose immediate family's maintain [tribal] values and practices. The findings of both model I and II are similar. In models I and II, individuals who never married are almost 50% more likely to have high psychological distress than those who are married (OR=1.46, $p<0.10$). Less than high school academic achievers are 4 times as likely to have a high Kessler 6 score than those with a college degree (OR=3.86, $p<0.05$). Among the Southwest tribal members in model I and II, individuals in households with less than $17,500 per year are nearly two and half times more likely to experience high psychological distress (OR=2.45, $p<0.10$) than individuals in the households that have yearly income of $60,000. For those participants who chose to not answer the income questions, they are only half as likely to be in the top 15% Kessler score category than those individuals who did answer the income questions on the survey (OR=0.49, $p<0.10$). Models I and II do not support hypothesis two.

Model III incorporates the religiospiritual variable, social support variables and the variables measuring the occurrence of a stressful event. The marital status variables cease to be statistically significant in model III and all remaining models. Beginning in model III through VII, individuals without a high school diploma are three times more likely to have high a psychological distress score compared with individuals with a college diploma (OR=3.11, $p<0.05$). Also consistent across all remaining models, individuals who live mostly on or near the reservation are 37% less likely to have a high Kessler score than those who lived their entire lives on the reservation (OR=0.63,

$p<0.05$). The finding that individuals who live mostly on or near the reservation are less likely to have high psychological distress does not directly support hypothesis one but does suggest a nuanced understanding of the reservation environment and its relationship with demoralization. This intriguing contrast with the findings for the Northern Plains tribe will be discussed in chapter 6.

Individuals with a strong sense of cultural spirituality are 32% less likely to have psychological distress than those with weak cultural spirituality. In addition, individuals who perceive high levels of negative social support or feel socially isolated are two times more likely to be among the top 15% than those who do not (OR=2.06, $p<0.01$; OR=1.85, $p<0.01$). Individuals who have a strong sense of instrumental social support (people they can depend on) are 37% less likely to experience psychological distress than those who do not feel they have a people they can depend upon in trouble (OR=0.63, $p<0.05$). The Southwest tribe findings on spirituality and social support concur with the Northern Plains findings in support of hypotheses three and four.

Model IV is similar to the previous three models with the addition of several control variables. The variables measure attitudes toward any mental health professional, utilization of mental health professional in past year, utilization of a medicine man, traditional healer, or participation in a ceremony performed for participant's health and well-being and cigarette and chewing tobacco use. Of the variables from model III, the findings in model IV are similar. Individuals without a high school diploma are three and half times more likely to have high psychological distress (OR=3.52, $p<0.05$). People who lived near or mostly on the reservation are 33% less likely to have high psychological distress (OR=0.67, $p<0.10$). Individuals with a strong sense of cultural

spirituality are 35% less likely to belong to the top 15% high psychological distress category (OR=0.65, $p<0.10$). Also, those who feel isolated or perceive high levels of negative social support are more likely have high psychological distress than those who do not (OR=1.85, $p<0.01$; OR=2.00, $p<0.01$). Those who feel they have people they can count on in times of trouble are 39% less likely to have psychological distress than those who do not have a strong sense of instrumental social support (OR=0.61, $p<0.05$). One change from model III to model IV is that individuals who make less than $17,500 per year are nearly two and half times more likely to have high psychological distress than those who make $60,000 per year (OR=2.45, $p<0.10$). Of the added substance use variables, those who currently smoke cigarettes are over two times more likely to belong to the 15% psychological distress category than those who do not currently smoke cigarettes (OR=2.29, $p<0.05$). The participants who currently chew tobacco are nearly two times more likely to have high psychological distress than the participants who do not currently chew tobacco (OR=1.76, $p<0.10$).

The remaining models displayed in Table 5 add the following independent variables: alcohol consumption, the occurrence of at least 1 self-reported physical health problem, the occurrence of at least one health limitation, and the individual reports their health to be "poor or fair." The findings in model V are similar to model IV except that income no longer has a significant effect. Within model V and VII, the alcohol consumption variables are not significant; thus, those who drank at least one day in the past year as well as those who went on a drinking spree for two or more days are not statistically different from those who do not drink in terms of predicting the top 15% highest psychological distress score. Also in model V, participants who report at least one

physical health problem and those who rate their health to be fair or poor are nearly two and a half times more likely to have a high Kessler score (OR=2.46, $p<0.05$; OR=2.57, $p<0.01$). Model VI looks much like model V except for those who have gotten drunk in the past month and for those who rate their health to be fair or poor. Those who have gotten drunk in the past month are two times more likely to belong to the top 15% of psychological distress than those who did not get drunk in the past 30 days. Model VII examines the alcohol consumers who go on binge drinking. Apart from the alcohol variable, model VII finds similar effects as model VI. Alcohol spree drinkers are not statistically different from non-alcohol-spree drinkers, but those individuals who did not answer the spree alcohol consumption question are statistically different from those who did answer the spree alcohol consumption question. Those who did not answer the question are 61% less likely to have high psychological distress then the participants who have an answer for the drinking spree measure (OR=0.39, $p<0.10$).

Hypothesis five predicts that substance use will increase the individual's likelihood to experience elevated psychological distress. The Southwest tribe's logistic regression on the top 15% highest Kessler 6 score, whose models include substance use (tobacco and alcohol), support hypothesis five. Those who currently smoke cigarettes and those who currently chew tobacco are more likely to have high psychological distress. Also, those who have been drunk in the past 30 days are two times more likely to have a high Kessler score than those who have not been drunk on alcohol in the past month.

Depression Questions from Kessler 6

Northern Plains Tribe

As previously, Table 6 displays the odds ratios of only the statistically significant findings on depression among either tribe. Table 6 shows the logistic regression analysis predicting whether an individual has a top 15% highest score of the three depression questions on the Kessler 6 among men and women of the Northern Plains Tribe. Model I has the following independent variables: age, gender, marital status, education, income, employment status, and location of lifetime residence. Within model I, the individuals who are 20-24 years-old are about half as likely as the individuals who are 40 years-old and older to experience high depression (OR=0.46, $p<0.01$). Individuals who have less than high school level of education and those who make less than $17,500 per year are three times more likely to experience high levels of depression than those who have a college degree and individuals who make more than $60,000 (OR=3.31, $p<0.01$; OR=2.95, $p<0.10$). In the logistic regression analysis of depression among the Northern Plains tribe, hypothesis one is not supported in the expectation that living on the reservation is protective against negative psychological health, because there is a statistical difference among those with varying levels of time spent on the reservation. This finding will be discussed in chapter 6.

Model II includes the basic demographic variables, tribal identity variables, as well as the following childhood stability variables: 1) individuals who lived in four or more houses during their childhood and 2) individuals who attended four or more schools throughout their childhood. The tribal identity variables include individuals who can speak their tribal native language, individuals who had their native language spoken in

their childhood household, individuals who maintain that their [tribe's] values and practices, and individuals whose immediate family's maintain [tribal] values and practices. In this model, the younger individuals (20-24 years old) continue to be half as likely as the eldest age category (40 years old plus) to belong to the top 15% score category of depression (OR=0.46, $p<0.01$). Also, individuals in households that make less than $17,500 per year continue to be three times as likely to experience high depression than individuals in households who make $60,000 (OR=3.53, $p<0.01$). Since model II does not suggest any statistical difference among the distribution of tribal ethnic identities, it does not support hypothesis two.

Model III incorporates the religiospiritual variable, social support variables, and the variables measuring the occurrence of a stressful event. The 20-24 years-old category and lowest education category continue contribute similar findings from model II (OR=0.40, $p<0.05$; OR=3.61, $p<0.01$). The first occurrence of statistical difference between men and women emerges in model III. Women are 46% more likely to have a high depression score than men when holding age, education, income, lifetime residence, childhood stability, tribal identity, religiospirituality, social support, and the occurrence of a stressful event constant (OR= 1.46, $p<0.10$). Also, beginning in model III is support for hypothesis three. Individuals who have a strong attachment to their spiritual beliefs are 47% less likely to have a high depression score then those who do not have strong spiritual beliefs (OR=0.53, $p<0.01$). In addition, model III strongly supports hypothesis four; individuals who perceive high levels of positive social support are 73% less likely to experience high levels of depression than those who do not have strong positive social support (OR=0.27, $p<0.01$). Also, those who perceive high levels of negative social

support and those who feel socially isolated are one and half to three times more likely to belong to the top 15% depression score category (OR=1.51, $p<0.05$; OR=2.74, $p<0.01$). Finally, in model III, tribal members who have experienced a traumatic event are nearly two times more likely to suffer depression (OR=1.94, $p<0.10$).

Models IV—VII incorporate variables that measure attitudes toward mental health care, utilization of tribal traditional medicine, and substance use. The remaining four models continue to support hypotheses three and four. Individuals who have spoken to someone about a personal or emotional problem are approximately one and half times more likely to have a high depression score than those who have not talked to someone about a personal or emotional problem (OR=1.5, $p<0.05$). Individuals who have seen a medicine man, traditional healer, or had a ceremony performed for their health and well-being are nearly two times more likely to have a high depression score than those who have not (OR=1.92, $p<0.05$). I do not interpret this as causal; I believe it illustrates that Northern Plains tribal members utilize both Western medicine resources as well as non-Western medicine resources to address aliments.

Models V—VII reinforce the substance-use hypothesis. Model VI shows that individuals who drank on at least one day in the past month are nearly three times more likely to experience depression than those who have not had a drink in the past 30 days (OR=2.89, $p<0.01$). Interestingly, individuals who did not answer the monthly alcohol question are two times more likely to have a top 15% depression score than those who did answer the monthly alcohol question (OR=2.09, $p<0.10$).

Table 6. Logistic Regression Results for Depression ~ *Northern Plains Tribe*

	Predicting 15% Depression Score from Kessler among Northern Plains Tribe						
	Model I Odds Ratios	Model II Odds Ratios	Model III Odds Ratios	Model IV Odds Ratios	Model V Odds Ratios	Model VI Odds Ratios	Model VII Odds Ratios
Age [1]							
25-39 years	0.77	0.81	0.73	0.71	0.78	0.79	0.80
	(0.14)	(0.15)	(0.16)	(0.18)	(0.20)	(0.20)	(0.21)
20-24 years	0.46 **	0.46 **	0.40 *	0.46 *	0.50 +	0.51 +	0.56
	(0.12)	(0.13)	(0.14)	(0.17)	(0.20)	(0.20)	(0.22)
Female	1.09	1.12	1.46 +	1.40	1.40	1.35	1.48 +
	(0.18)	(0.19)	(0.31)	(0.32)	(0.32)	(0.31)	(0.34)
Education [2]							
Some College	1.25	1.35	1.35	1.92	1.70	1.92	2.10
	(0.53)	(0.59)	(0.62)	(0.94)	(0.90)	(1.03)	(1.16)
High School Diploma	1.45	1.58	1.57	2.13	1.76	1.94	2.24
	(0.58)	(0.67)	(0.68)	(1.00)	(0.93)	(1.03)	(1.21)
Less than High School	3.31 **	3.53 **	3.61 **	5.49 **	3.77 *	4.36 **	4.54 **
	(1.40)	(1.57)	(1.68)	(2.76)	(2.05)	(2.40)	(2.56)
Income [3]							
$35,000-$45,000	1.60	1.61	3.76	3.79	2.97	2.60	2.67
	(1.10)	(1.11)	(3.33)	(3.42)	(2.61)	(2.18)	(2.31)
$25,000	2.06	2.07	3.50	3.23	2.59	2.13	2.24
	(1.41)	(1.41)	(3.13)	(2.98)	(2.33)	(1.83)	(1.99)
Less than $17,500	2.95 +	2.84	3.85	3.82	2.70	2.36	2.37
	(1.90)	(1.83)	(3.22)	(3.28)	(2.25)	(1.87)	(1.95)
Missing	1.32	1.26	1.51	1.27	1.47	1.36	1.51
	(0.37)	(0.37)	(0.54)	(0.46)	(0.50)	(0.49)	(0.54)
Lifetime Residence [4]							
Mostly on or Near Reservation	1.17	1.15	1.21	1.22	1.22	1.27	1.26
	(0.20)	(0.20)	(0.28)	(0.28)	(0.28)	(0.29)	(0.29)
Mostly off the Reservation	1.08	0.93	1.07	1.07	0.90	0.97	0.98
	(0.37)	(0.32)	(0.44)	(0.46)	(0.40)	(0.48)	(0.48)
Lived in 4 or more Child homes		1.21	0.92	0.88	0.83	0.75	0.76
		(0.24)	(0.23)	(0.22)	(0.22)	(0.20)	(0.20)
Tribal Values Important to Family		1.51	1.53	1.43	1.53	1.49	1.58
		(0.63)	(0.68)	(0.67)	(0.70)	(0.66)	(0.71)
Cultural spirituality scale score							
Highest Score (1)			0.53 **	0.55 *	0.61 +	0.63 +	0.62 +
			(0.13)	(0.14)	(0.16)	(0.17)	(0.16)
Social Support							
Perceived Social Support			0.27 **	0.26 **	0.27 **	0.29 **	0.29 **
			(0.09)	(0.09)	(0.09)	(0.10)	(0.10)
Negative Social Support			1.51 *	1.44 +	1.41	1.32	1.26
			(0.31)	(0.31)	(0.31)	(0.29)	(0.28)
Isolated			2.74 **	2.89 **	2.66 **	2.83 **	2.75 **
			(0.60)	(0.64)	(0.62)	(0.68)	(0.66)
Stressful Events							
Occurrence of Recent Event			0.72	0.65	0.60 +	0.56 *	0.52 *
			(0.22)	(0.20)	(0.17)	(0.16)	(0.15)
Occurrence of Traumatic Event			1.95 *	2.09 **	1.99 *	2.16 **	2.01 *
			(0.53)	(0.57)	(0.56)	(0.62)	(0.56)
Attitude toward Mental Health Care				1.45 +	1.57 *	1.57 *	1.53 +
				(0.32)	(0.34)	(0.35)	(0.33)
Use of Traditional Healer, Medicine Man				1.79 *	1.92 *	1.91 *	1.98 *
				(0.52)	(0.56)	(0.54)	(0.57)
Substance Use							
In last 30 day, used chewing tobacco				0.95	0.91	0.89	0.89
				(0.39)	0.38	(0.37)	(0.37)
Missing				0.85	(0.89)	0.98	0.94
				(0.21)	(0.22)	(0.24)	(0.23)
Drank alcohol in past month					2.88 **		
					(0.83)		
Got Drunk in past month						3.78 **	
						(0.97)	
Went on Drinking Spree in past month							2.09 *
							(0.77)
Missing					2.09 *	1.72 +	0.47 *
					(0.70)	(0.49)	(0.15)
Utilized I.H.S. in past year					0.87	0.83	0.81
					(0.18)	(0.18)	(0.17)
Occurrence of at least 1 health limitation					1.57 *	1.71 *	1.65 *
					(0.36)	(0.39)	(0.38)
Self-Reported Health to be Poor or Fair					1.96 **	1.72 *	1.70 *
					(0.46)	(0.41)	(0.40)

Log Likelihood	-587.31	-568.45	-395.72	-381.90	-364.58	-358.68	-357.01
Psuedo R-Squared	0.06	0.09	0.37	0.39	0.42	0.43	0.43
N	1,365	1,345	1,266	1,249	1,248	1,248	1,248

Note: † p < 0.10, * p < 0.05, ** p < 0.01

[1]Reference Category (RC): 40+ years; [2]RC: College Degree; [3]RC: $60,000; [4]RC: All of life on Reservation;

In model VI, participants who got drunk on alcohol in the past month are nearly four times more likely to have a high depression score than those who have not gotten drunk in the past month (OR=3.78, $p<0.01$); note: individuals who have not provided an answer for the gotten drunk question are nearly twice as likely to experience high levels of depression than those who provided an answer (OR=1.72, $p<0.10$). In model VII, binge drinkers are two times more likely to belong to the top 15% of depression score than those who do not binge drink in the past month (OR=2.09, $p<0.01$). Among those who did have a response to binge alcohol consumption, respondents are half as likely to have a high depression score than those who did not answer the alcohol spree question (OR=0.46, $p<0.05$). Finally, across the remaining models, those who rate their health to be "fair or poor" or those who experience at least one physical limitation are nearly two times more likely to have high level depression score.

Southwest Tribe

Overall, the logistic regression analysis predicting top 15% depression score supports hypothesis four and five; however, there are a few models that suggest support for hypothesis one and two. In regard to the high depression score, there is no statistical difference between those who have strong spiritual beliefs than those without spiritual belief and thus, does not support hypothesis three.

In model I, age categories 25-39 years-old and 20-24 years-old are less likely to belong to the top 15% depression score than the 40+ years-old (OR=0.72, $p<0.10$; OR=0.61, $p<0.10$). Individuals who have less than a high school diploma are three times more likely to belong to the top 15% than those who have a college degree (OR=3.37, $p<0.05$). Also, individuals in households that make less than $17,500 per year are two

times more likely than individuals in households earning $60,000 per year to have a high depression score (OR=1.90, $p<0.05$).

Model II has only two significant variables. Participants without a high school diploma continue to have three times the likelihood of reporting a high depression score (OR=3.31, $p<0.05$). In addition, one of the childhood stability variables has a significant relationship with predicting whether an individual has a top 15% depression score among the Southwest tribe. Individuals who lived in four or more homes as a child are more than twice as likely to experience depression than those who lived in few homes through out childhood (OR=1.62, $p<0.10$).

Model III incorporates the religiospiritual variable, social support variables, and the variables measuring the occurrence of a stressful event. Education ceases to have a statistically significant relationship with predicting high levels of depression. Individuals in the lowest income category (less than $17,500) is nearly six times more likely to belong to the high depression category than individuals in the $60,000 income category. Also, individuals who lived their life mostly on or near the reservation are 38% less likely to belong to the 15% highest depression score than those who spent their entire lives on the reservation. The social support variables are added as controls and individuals who feel socially isolated are nearly two times more likely than those who feel socially supported to score high on the depression scale (OR=1.80, $p<0.05$).

Table 7. Logistic Regression Results for Depression ~ *Southwest Tribe*

	Predicting 15% Depression Score from Kessler among Southwest Tribe						
	Model I Odds Ratios	Model II Odds Ratios	Model III Odds Ratios	Model IV Odds Ratios	Model V Odds Ratios	Model VI Odds Ratios	Model VII Odds Ratios
Age [1]							
25-39 years	0.73 +	0.82	1.26	1.12	1.39	1.40	1.40
	(0.14)	(0.16)	(0.34)	(0.33)	(0.42)	(0.43)	(0.43)
20-24 years	0.61 +	0.64	0.67	0.64	0.86	0.86	0.86
	(0.17)	(0.19)	(0.30)	(0.29)	(0.41)	(0.41)	(0.40)
Female	1.14	1.11	1.11	1.44	1.29	1.40	1.43
	(0.19)	(0.19)	(0.27)	(0.42)	(0.41)	(0.46)	(0.44)
Education [2]							
Some College	1.63	1.60	0.81	0.83	0.83	0.81	0.81
	(0.84)	(0.83)	(0.63)	(0.61)	(0.63)	(0.62)	(0.62)
High School Diploma	2.04	2.02	1.40	1.41	1.29	1.25	1.25
	(1.03)	(1.04)	(1.08)	(1.02)	(0.95)	(0.94)	(0.94)
Less than High School	3.37 *	3.31 *	2.26	2.37	2.06	1.83	1.84
	(1.78)	(1.78)	(1.82)	(1.76)	(1.58)	(1.43)	(1.45)
Income [3]							
$35,000-$45,000	1.56	1.49	5.16	5.43 +	5.20 +	5.10 +	5.19 +
	(0.64)	(0.61)	(5.33)	(5.41)	(4.96)	(4.97)	(5.06)
$25,000	1.07	0.93	3.37	3.81	3.63	3.78	3.80
	(0.46)	(0.41)	(3.52)	(3.77)	(3.46)	(3.69)	(3.70)
Less than $17,500	1.90 +	1.77	5.71 +	6.49 +	4.72 +	4.65	4.72
	(0.71)	(0.67)	(5.83)	(6.28)	(4.37)	(4.42)	(4.48)
Missing	1.28	1.16	0.72	0.83	0.86	0.89	0.89
	(0.35)	(0.36)	(0.37)	(0.44)	(0.49)	(0.51)	(0.51)
Lifetime Residence [4]							
Mostly on or Near Reservation	0.86	0.83	0.62 +	0.64 +	0.69	0.71	0.70
	(0.15)	(0.15)	(0.15)	(0.16)	(0.18)	(0.18)	(0.18)
Mostly off the Reservation	0.87	0.79	0.86	0.97	1.10	1.09	1.06
	(0.41)	(0.40)	(0.45)	(0.54)	(0.66)	(0.66)	(0.66)
Lived in 4 or more Child homes		1.62 +	1.65	1.55	1.42	1.44	1.44
		(0.43)	(0.63)	(0.63)	(0.57)	(0.58)	(0.59)
Tribal Values Important to Family		0.63	0.46	0.44 +	0.42	0.44	0.44
		(0.26)	(0.23)	(0.21)	(0.23)	(0.24)	(0.24)
Cultural spirituality scale score							
Highest Score (1)			0.68	0.64	0.66	0.69	0.69
			(0.18)	(0.18)	(0.19)	(0.20)	(0.20)
Social Support							
Perceived Social Support			0.76	0.75	0.77	0.74	0.74
			(0.27)	(0.27)	(0.28)	(0.27)	(0.27)
Negative Social Support			1.46	1.45	1.38	1.38	1.37
			(0.35)	(0.37)	(0.36)	(0.36)	(0.36)
Isolated			1.80 *	1.78 *	1.58 +	1.62 +	1.63 *
			(0.43)	(0.43)	(0.39)	(0.40)	(0.40)
Stressful Events							
Occurrence of Recent Event			1.29	1.15	1.15	1.12	1.11
			(0.37)	(0.34)	(0.36)	(0.35)	(0.34)
Occurrence of Traumatic Event			1.27	1.14	1.16	1.14	1.14
			(0.34)	(0.32)	(0.33)	(0.33)	(0.33)
Attitude toward Mental Health Care				1.20	1.29	1.24	1.24
				(0.29)	(0.33)	(0.32)	(0.31)
Use of Traditional Healer, Medicine Man				1.44	1.28	1.25	1.26
				(0.36)	(0.33)	(0.33)	(0.33)
Substance Use							
In last 30 day, used chewing tobacco				2.09 *	2.21 *	2.03 *	2.04 *
				(0.73)	(0.76)	(0.69)	(0.69)
Missing				0.95	0.98	0.98	0.99
				(0.31)	(0.32)	(0.32)	(0.33)
Drank alcohol in past month					0.56 +		
					(0.19)		
Got Drunk in past month						1.46	
						(0.65)	
Went on Drinking Spree in past month							0.68
							(0.51)
Missing					0.82	1.07	0.56
					(0.24)	(0.30)	(0.34)
Utilized I.H.S. in past year					0.61 *	0.61 *	0.60 *
					(0.15)	(0.15)	(0.15)
Occurrence of at least 1 health limitation					2.48 **	2.48 **	2.49 *
					(0.73)	(0.73)	(0.74)
Self-Reported Health to be Poor or Fair					2.08 **	2.08 **	2.11 *
					(0.54)	(0.55)	(0.56)
Log Likelihood	-516.23	-498.39	-294.98	-284.51	-270.58	-271.85	-271.62
LR Chi Squared	-0.35	-0.30	0.23	0.26	0.29	0.29	0.29
N	1,229	1,211	1,099	1,086	1,086	1,086	1,086

Note: † p < 0.10, * p < 0.05, ** p < 0.01

[1]Reference Category (RC): 40+ years; [2]RC: College Degree; [3]RC: $60,000; [4]RC: All of life on Reservation;

Model IV has additional variables measuring attitudes toward any mental health professional, utilization of mental health professional in past year, utilization of a medicine man, traditional healer, or had a ceremony performed for participant's health and well-being and cigarette/chewing tobacco use. Individuals in households whose income is less than $60,000 seem to be five to six times more likely to belong to the high 15% depression category [($35,000-$45,000) OR=5.43, $p<0.10$; (Less than $17,500) OR=6.49, $p<0.10$)]. Individuals who live mostly on or near the reservation continue to be less likely to have high depression than those who have lived their whole lives on the reservation and socially isolated individuals continue to be twice as likely to belong to the high depression group compared with those who feel socially supported. In support of hypothesis two, individuals whose family view tribal values as important are 56% less likely to belong to the 15% high depression category than participants whose family do not view tribal values as important (OR=0.44, $p<0.10$). In addition, individuals who currently chew tobacco are more than two times more likely to belong to the high depression category than those who do not chew tobacco (OR=2.09, $p<0.05$); the models findings also suggest support to hypothesis five.

The remaining models displayed in Table 7 lend additional support to substance use increasing the likelihood for high depression. Individuals who currently chew tobacco are two times more likely to report high levels of depression than those who do not chew tobacco. Interestingly, none of the severe alcohol consumption variables have a significant relationship in predicting the top 15% category of depression, and the individuals who drank at least one day in the past month are 44% less likely to have high

levels of depression than those who do not drink alcohol (OR=0.56, $p<0.10$). Socially isolated individuals continue to be twice as likely to belong to the high depression group than those who feel socially supported. With respect to income, individuals who make $35,000-$45,000 per year category are five times more likely to experience high levels of depression than those who make $60,000 (OR=5.11, $p<0.10$).

Finally, in models V, VI, and VII, individuals who have utilized IHS in the past year are 39% less likely to score in the high depression group than those who have not utilized I.H.S services for help with a physical health problem, a drug or alcohol problem, or an emotional problem. Participants who report an occurrence of at least one health limitation are two and a half times more likely to belong to the top 15% depression group than those who do not report physical limitations. Finally, those who self-report their health to be "poor or fair" are two times more like to have high depression.

Anxiety Questions from Kessler 6

Northern Plains Tribe

Table 8 illustrates logistic regressions that predict the likelihood of participants from the Northern Plains tribe belonging to the top 15% score from the anxiety portion of the Kessler 6. Model I has the following independent variables: age, gender, marital status, education, income, employment status, and location of lifetime residence. Model II of Table 8 has the basic demographic variables plus the childhood stability variables and tribal identity variables. In these models, the variables that reach statistical significance are marital status and education. In model I, individuals who are separated, divorced, or widowed are one and a half times more likely to have high anxiety and

individuals who do not have a high school diploma are nearly three times more likely to belong to the top 15% anxiety group than those with a college degree (OR=2.86, $p<0.05$). Within model II, both separated, divorced or widowed individuals and never married individuals are one and half times more likely to have high anxiety than those who are married (OR=1.54, $p<0.05$; OR=1.45, $p<0.10$). Across all models in Table 8, individuals are significantly more likely belong to the top 15% anxiety group than college graduates.

In support of hypothesis four, individuals who perceive high positive social support are 50% less likely to have high anxiety in models II and III. Also, individuals who have high negative social support and individuals who feel socially isolated are two times more likely to belong to the 15% high anxiety group in models III through VII. In models V—VII, individuals who report their health to be "poor or fair" are two times more likely to have high anxiety than those who report their health to be good or excellent (OR=2.11, $p<0.01$). Interestingly the individuals who did not respond to the current status of chewing tobacco use are 40% less likely to belong to the 15% high anxiety category than the participants who answered the chewing tobacco use question.

Table 8. Logistic Regression Results Anxiety ~ *Northern Plains Tribe*

Predicting 15% Anxiety Score from Kessler among Northern Plains Tribe							
	Model I Odds Ratios	Model II Odds Ratios	Model III Odds Ratios	Model IV Odds Ratios	Model V Odds Ratios	Model VI Odds Ratios	Model VII Odds Ratios
Sex[1]							
Female	0.83	0.87	0.98	1.03	0.94	0.95	1.00
	(0.14)	(0.15)	(0.20)	(0.23)	(0.22)	(0.22)	(0.23)
Marital Status [2]							
Separated, Divorced, Widowed	1.50 +	1.54 *	1.32	1.40	1.35	1.33	1.31
	(0.32)	(0.34)	(0.36)	(0.39)	(0.38)	(0.38)	(0.38)
Never Married	1.40	1.45 +	1.59 +	1.47	1.43	1.42	1.44
	(0.30)	(0.31)	(0.40)	(0.38)	(0.40)	(0.39)	(0.40)
Education [3]							
Some College	1.75	1.96	2.03	3.16 +	3.38 *	3.54 *	3.67 *
	(0.81)	(0.96)	(1.06)	(1.92)	(2.09)	(2.25)	(2.38)
High School Diploma	1.61	1.83	1.79	2.76 +	2.73 +	2.77	2.97 +
	(0.73)	(0.88)	(0.89)	(1.63)	(1.66)	(1.74)	(1.90)
Less than High School	2.86 *	3.23 *	3.14 *	5.53 **	4.47 *	4.53 *	4.57 *
	(1.36)	(1.63)	(1.70)	(3.51)	(2.89)	(3.01)	(3.09)
Income [4]							
$35,000-$45,000	1.07	1.04	2.00	2.13	1.75	1.65	1.59
	(0.65)	(0.63)	(1.47)	(1.55)	(1.24)	(1.13)	(1.09)
$25,000	1.10	1.08	1.33	1.40	1.16	1.05	1.05
	(0.67)	(0.66)	(1.01)	(1.05)	(0.85)	(0.75)	(0.75)
Less than $17,500	1.81	1.68	1.84	1.82	1.37	1.29	1.23
	(1.00)	(0.93)	(1.24)	(1.21)	(0.88)	(0.80)	(0.77)
Missing	1.13	1.09	1.27	1.07	1.23	1.18	1.27
	(0.32)	(0.33)	(0.47)	(0.43)	(0.46)	(0.45)	(0.49)
Employment Status [5]							
Employed	0.66	0.67	0.69	0.74	0.78	0.76	0.73
	(0.20)	(0.21)	(0.24)	(0.28)	(0.30)	(0.29)	(0.27)
Unemployed	0.72	0.73	0.58	0.70	0.64	0.64	0.61
	(0.22)	(0.23)	(0.21)	(0.27)	(0.25)	(0.25)	(0.24)
Lived in 4 or more Child homes		1.29	0.96	0.91	0.84	0.80	0.80
		(0.26)	(0.23)	(0.22)	(0.21)	(0.20)	(0.20)
Attended 4 or more schools		1.21	1.26	1.12	1.20	1.24	1.26
		(0.33)	(0.39)	(0.36)	(0.39)	(0.41)	(0.41)
Social Support							
Perceived Social Support			0.47 *	0.50 *	0.61	0.62	0.62
			(0.14)	(0.16)	(0.19)	(0.19)	(0.19)
Negative Social Support			1.95 **	1.90 **	1.92 **	1.84 **	1.79 *
			(0.43)	(0.43)	(0.45)	(0.43)	(0.42)
Isolated			2.65 **	2.92 **	2.61 **	2.65 **	2.60 **
			(0.59)	(0.66)	(0.61)	(0.63)	(0.61)
Stressful Events							
Occurrence of Recent Event			1.15	0.95	0.92	0.89	0.85
			(0.37)	(0.31)	(0.30)	(0.29)	(0.28)
Occurrence of Traumatic Event			1.69 *	1.65 +	1.56 +	1.58 +	1.55
			(0.45)	(0.43)	(0.42)	(0.43)	(0.42)
Attitude toward Mental Health Care				1.66 *	1.71 *	1.72 *	1.70 *
				(0.37)	(0.38)	(0.38)	(0.38)
Substance Use							
In last 30 day, smoked cigarette				1.45	1.45	1.43	1.41
				(0.40)	(0.41)	(0.40)	(0.40)
Missing				1.22	1.18	1.20	1.24
				(0.39)	(0.40)	(0.40)	(0.41)
In last 30 day, used chewing tobacco				1.35	1.29	1.31	1.31
				(0.52)	(0.52)	(0.53)	(0.53)
Missing				0.60 *	0.60 *	0.62 +	0.61 +
				(0.15)	(0.15)	(0.16)	(0.16)
Utilized I.H.S. in past year					0.73	0.72	0.71
					(0.17)	(0.17)	(0.16)
Self-Reported Health to be Poor or Fair					2.25 **	2.13 **	2.11 **
					(0.56)	(0.54)	(0.54)
Log Likelihood	-601.80	-584.10	-416.44	-406.80	-396.00	-389.12	-387.66
Psuedo R-Squared	0.04	0.06	0.33	0.348175	0.3654725	0.38	0.38
N	1,365	1,345	1,266	1,249	1,248	1,248	1,248

Note: † p < 0.10, * p < 0.05, ** p < 0.01

[1]Reference Category (RC): male; [2]RC: Married; [3]RC: College Degree; [4]RC: $60,000; [5]RC: Student;

Southwest Tribe

The logistic regression models that predict top 15% anxiety score from the three anxiety questions taken from the Kessler 6 are shown in Table 9 for the Southwest Tribe. In models I and II, the women are more likely to have a high anxiety score than the men (OR=1.4, $p<0.10$). Model I does not provide any support for hypothesis one because there is no statistical difference between individuals' length of stay on the reservation in predicting severe (top 15%) anxiety. Examining the income variables in model I, there is not a statistical relationship between the respondent income categories and predicting high anxiety, but individuals who did not provide income information are 62% more likely to have high anxiety than those who did provide an income answer (OR=1.62, $p<0.10$). This relationship is only significant in model I. Additionally, in model II, participants who lived in four or more houses from age 6 to 16 are nearly two times more likely to have a high anxiety score (OR=1.74, $p<0.10$). Model II does not provide any support for hypothesis two. None of the tribal ethnic identity measures have a statistically significant relation when predicting anxiety level from the Kessler 6.

Model III incorporates the religiospiritual variable, social support variables, and the variables measuring the occurrence of a stressful event while predicting top 15% anxiety score. Women have twice the likelihood as men in model III (OR=1.84, $p<0.10$). None of the marital status, education, or income measure reaches statistical significance. Interestingly, unemployed individuals are approximately 60% less likely to be in the high anxiety category than individuals who are students (OR=0.39, $p<0.10$). Another intriguing finding is that individuals who attended four or more schools between ages 6

and 16 are 77% less likely to have high anxiety as compared to individuals who attended few schools (OR=0.23, $p<0.10$). This finding remains in model IV but disappears once controlling for attitude toward mental health care, alcohol use, utilization of IHS, and self-rated health. It suggests further investigation into the influence of childhood stability issues. Finally, in model III, participants who are twice as likely to experience high levels of anxiety are individuals who perceive negative social support and individuals have experienced a recent event such as their car was recently broken into. Negative social support consists of individuals whose family activities do such things as drink or do drugs too much. Since negative social support has a significant relationship with high anxiety, it lends support to hypothesis four that positive social support will contribute to the likelihood of having lower psychological distress.

Model IV begins to introduce the substance use variables (cigarette and chewing tobacco use) as well as measures for attitude toward any mental health professional, utilization of mental health professional in past year, utilization of a medicine man, traditional healer, or had a ceremony performed for participant's health. The relationships from model III that remain are unemployed status, attended more than four schools, perceived negative social support, and the occurrence of a recent event. Additionally, individuals who have spoken to someone in the past year regarding an emotional or personal problem are twice as likely to have high anxiety than those who have not spoken to anyone (OR=2.09, $p<0.05$), which I think is a finding as a result of a cross-sectional study. Concerning substance use in model IV, respondents who currently smoke cigarettes are nearly four times more likely to a high anxiety score than those who do not currently smoke (OR=3.63, $p<0.05$); also, individuals who did not provide an answer for

the chewing tobacco status are two times more likely to experience anxiety than those who gave an answer (OR=2.13, p=0.10). The current cigarette smoking status finding provides support to hypothesis four that substance will increase the likelihood of severe psychological distress.

Models V-VII in Table 9 show the logistic regression predicting high anxiety on the basic demographic characteristics and adds alcohol use variables, sources of physical limitations and self-rated health. In these models, none of the alcohol consumption measures are statistically significant in predicting high anxiety, but the relationship between current cigarette smokers and anxiety remain. This confirms hypothesis four but also suggests that all substance use influences all types of psychological distress in the same way.

The remaining statistically significant measures in predicting high anxiety among the Southwest tribe in Table 9 are employment status, childhood stability, social support, stressful events, utilization of IHS and self-rated health. Unemployed individuals continue to be less likely to have high anxiety as compared to students (OR=0.4, p<0.10). Participants who lived in more than four homes between ages 6 and 16 are twice as likely to have high anxiety as compared to individuals who lived in few homes during their childhood (OR=2.3, p<0.10). Tribal members who feel high negative social support are also twice as likely to have high anxiety than those who do not experience negative social support (OR=1.8, p<0.10). The experience of a recent event increases the odds of having anxiety by nearly three times (OR=2.9, p<0.10). Current cigarette smokers are three times more likely to report high anxiety than non-smokers (OR=3.0, p<0.05). Individuals who utilized the IHS in the past year are twice as likely to report high anxiety as

individuals who have not utilized of IHS for health care of any kind in the past year (OR=1.9, $p<0.05$). Finally, individuals who rate their own health as "fair or poor" are nearly four times more likely to report high levels of anxiety than those who rate their health as "excellent, very good, or good" (OR=3.8, $p<0.01$).

Logistic regression results, which examined severe psychological distress, high depression, and high anxiety were discussed in this chapter. Overall, there has been mixed support on whether living on the reservation has beneficial effects; this was the case for the Northern Plains, but not for the Southwest tribe. There has been no direct support for hypothesis two. None of the tribal ethnic identity measures had a statistical relationship with the predicted outcome. Cultural-spirituality does seem to reduce the likelihood of severe psychological distress (hypothesis three). Also, social support does seem to have a very important relationship in predicting severe psychological distress. The positive social support measures such as perceived social support and instrumental social support did contribute to a reduced likelihood of severe psychological distress, but the noteworthy relationships were between negative social support/social isolation and severe psychological distress. It suggests further research on social networks and their utilization within the American Indian communities.

Table 9. Logistic Regression Results for Anxiety ~ *Southwest Tribe*

Predicting 15% Anxiety Score from Kessler among Southwest Tribe							
	Model I Odds Ratios	Model II Odds Ratios	Model III Odds Ratios	Model IV Odds Ratios	Model V Odds Ratios	Model VI Odds Ratios	Model VII Odds Ratios
Sex[1]							
Female	1.44 +	1.39 +	1.84 +	1.32	1.14	1.21	1.30
	(0.27)	(0.27)	(0.58)	(0.45)	(0.41)	(0.45)	(0.45)
Marital Status [2]							
Separated, Divorced, Widowed	0.85	0.83	0.69	0.69	0.62	0.60	0.60
	(0.22)	(0.22)	(0.32)	(0.32)	(0.29)	(0.28)	(0.27)
Never Married	1.03	1.00	1.17	1.19	1.16	1.07	1.06
	(0.23)	(0.23)	(0.37)	(0.39)	(0.41)	(0.39)	(0.38)
Education [3]							
Some College	1.28	1.26	0.80	0.82	0.67	0.74	0.73
	(0.62)	(0.63)	(0.68)	(0.70)	(0.55)	(0.62)	(0.62)
High School Diploma	1.37	1.39	1.34	1.47	1.35	1.45	1.43
	(0.64)	(0.67)	(1.12)	(1.23)	(1.10)	(1.23)	(1.22)
Less than High School	2.20	2.20	2.22	2.70	2.48	2.59	2.63
	(1.08)	(1.11)	(1.91)	(2.35)	(2.14)	(2.31)	(2.37)
Income [4]							
$35,000-$45,000	1.45	1.40	2.79	3.75	4.36	4.33	4.35
	(0.63)	(0.62)	(3.07)	(4.51)	(5.63)	(5.66)	(5.61)
$25,000	0.68	0.63	1.29	1.71	1.79	1.83	1.87
	(0.33)	(0.31)	(1.38)	(1.96)	(2.20)	(2.27)	(2.30)
Less than $17,500	1.80	1.65	4.22	5.24	5.45	5.55	5.56
	(0.70)	(0.64)	(4.05)	(5.56)	(6.30)	(6.48)	(6.40)
Missing	1.62 +	1.58	1.11	1.25	1.03	1.02	1.05
	(0.45)	(0.48)	(0.59)	(0.69)	(0.61)	(0.61)	(0.62)
Employment Status [5]							
Employed	0.61	0.64	0.44	0.48	0.44	0.44	0.46
	(0.25)	(0.26)	(0.22)	(0.25)	(0.23)	(0.23)	(0.23)
Unemployed	0.57	0.58	0.39 +	0.41 +	0.35 +	0.35 +	0.37 +
	(0.24)	(0.25)	(0.21)	(0.22)	(0.19)	(0.19)	(0.20)
Lived in 4 or more Child homes		1.74 +	1.81	2.02	2.25 +	2.31 +	2.34 +
		(0.52)	(0.79)	(0.90)	(1.01)	(1.04)	(1.08)
Attended 4 or more schools		0.53	0.23 +	0.26 +	0.28	0.29	0.29
		(0.25)	(0.18)	(0.21)	(0.23)	(0.24)	(0.23)
Social Support							
Perceived Social Support			1.46	1.36	1.61	1.57	1.62
			(0.51)	(0.50)	(0.60)	(0.59)	(0.61)
Negative Social Support			1.98 *	1.98 *	1.79 +	1.81 +	1.80 +
			(0.60)	(0.63)	(0.56)	(0.56)	(0.55)
Isolated			0.97	0.97	0.88	0.86	0.87
			(0.31)	(0.33)	(0.30)	(0.31)	(0.31)
Stressful Events							
Occurrence of Recent Event			2.61 *	2.67 *	2.94 *	2.88 *	2.82 *
			(1.18)	(1.20)	(1.34)	(1.32)	(1.30)
Occurrence of Traumatic Event			1.63	1.66	1.66	1.66	1.64
			(0.54)	(0.57)	(0.54)	(0.55)	(0.54)
Attitude toward Mental Health Care				2.09 *	2.00 *	1.90 +	1.89 *
				(0.66)	(0.65)	(0.63)	(0.60)
Substance Use							
In last 30 day, smoked cigarette				3.63 *	3.31 *	2.98 +	3.11 *
				(2.13)	(1.85)	(1.71)	(1.78)
Missing				2.18	2.06	2.07	2.21
				(1.11)	(1.01)	(1.03)	(1.10)
In last 30 day, used chewing tobacco				1.26	1.41	1.30	1.29
				(0.72)	(0.84)	(0.76)	(0.75)
Missing				2.13 +	2.44 *	2.45 *	2.47 *
				(0.92)	(1.09)	(1.11)	(1.11)
Utilized I.H.S. in past year					1.95 *	1.98 *	1.95 *
					(0.61)	(0.62)	(0.61)
Self-Reported Health to be Poor or Fair					3.84 **	3.81 **	3.89 *
					(1.29)	(1.29)	(1.31)
Log Likelihood	-429.91	-414.15	-197.73	-188.83	-178.44	-178.18	-178.62
LR Chi Square	-0.63	-0.57	0.25	0.29	0.32	0.33	0.32
N	1,229.0	1,188.0	1,077.0	1,064.0	1,063.0	1,063.0	1,063.0

Note: † p < 0.10, * p < 0.05, ** p < 0.01

[1]Reference Category (RC): male; [2]RC: Married; [3]RC: College Degree; [4]RC: $60,000; [5]RC: Student;

Chapter Five: Self-Rated Health Results

This chapter is made up of two sections of analysis. The analysis predicts the likelihood of an individual of either tribe, Northern Plains or Southwest, rating their personal health as fair or poor. In the survey given in the AI-SUPERPFP, participants were asked to answer the following question, "In general, would you say your health is: fair, poor, good, very good, or excellent." Among both men and women of the Northern Plains tribe, the participants reported their health to be "very good" most often. Comparatively, men and women of the Southwest tribe chose "good" most often as their health status.

Even though demoralization is primarily an emotional or psychological syndrome, it can also influence an individual's self-perception of their physical health. A person in a state of hopelessness or helplessness tends to feel his health is not excellent. Also, as the findings in Chapter Four suggest, the individuals who report any physical problem or condition are more likely to also report their psychological distress as high.

Hypotheses

The following research hypotheses guide this section of the dissertation study as well as the logistic regressions and interpretation. The research hypotheses are as follows:

1. Tribal participants who live primarily on the reservation will rate their health better than those participants who have not lived primarily on the reservation because of access to Indian Health Services.
2. Individuals with a strong tribal ethnic identity will be less likely to view their health status as poor.

3. Both Southwest and Northern Plains tribe members who have strong attachment to their spiritual beliefs will perceive their health to be excellent.
4. High levels of positive social support will contribute to better self-rated health.
5. Individuals who participate in substance use will have lower rated health than individuals who do not use tobacco products or alcohol.

Self-Rated Health Findings: *Northern Plains Tribe*

Table 10 shows the logistic regression analysis predicting whether an individual has rated his or her health to be fair or poor among men and women of the Northern Plains Tribe. Table 10 shows only odds ratios with statistically significant findings on one of the seven models. Model I has the following independent variables: age, gender, marital status, education, income, employment status, and location of lifetime residence. In model one, the individuals who are of 25-39 years are much less likely than individuals who are forty years-old and older to rate their health as "poor or fair" (OR=0.48, $p<0.01$) and young adults ages 20-24 years are 74% less likely to rate their health as poor or fair compared to their 40 year-old peers (OR=0.26, $p<0.01$). Also, women of the Northern Plains tribe are 30% more likely to rate their health poor as compared with men (OR=1.31, $p<0.10$). Individuals who did not graduate high school are two times more likely to rate their health as poor or fair than those who graduated from college (OR=2.17, $p<0.05$).

Table 10: Logistic Regression Results for Self-Rated Health ~ *Northern Plains Tribe*

Predicting Poor/Fair Self-Reported Health among Northern Plains Tribe Models I-VII

	Model I Odds Ratios	Model II Odds Ratios	Model III Odds Ratios	Model IV Odds Ratios	Model V Odds Ratios	Model VI Odds Ratios	Model VII Odds Ratios
Age and Gender[1]							
25-39 years	0.48 **	0.50 **	0.53 **	0.50 **	0.68 +	0.66 +	0.66 +
	(0.08)	(0.08)	(0.09)	(0.10)	(0.15)	(0.15)	(0.15)
20-24 years	0.26 **	0.28 **	0.32 **	0.31 **	0.57 +	0.54 +	0.56 +
	(0.07)	(0.08)	(0.09)	(0.09)	(0.19)	(0.18)	(0.19)
Female	1.31 +	1.32 +	1.33 +	1.35 +	0.95	0.98	1.00
	(0.19)	(0.20)	(0.22)	(0.24)	(0.20)	(0.20)	(0.20)
Marital Status[2]							
Separated, Divorced, Widowed	0.98	0.99	1.05	1.10	1.18	1.17	1.18
	(0.18)	(0.18)	(0.21)	(0.22)	(0.26)	(0.26)	(0.27)
Never Married	1.13	1.22	1.36	1.36	1.54 +	1.55 +	1.56 +
	(0.21)	(0.23)	(0.28)	(0.29)	(0.36)	(0.36)	(0.36)
Education[3]							
Some College	0.63	0.63	0.57	0.63	0.71	0.70	0.71
	(0.21)	(0.21)	(0.20)	(0.23)	(0.29)	(0.29)	(0.29)
High School Diploma	0.97	0.92	0.92	1.01	1.07	1.04	1.06
	(0.30)	(0.29)	(0.31)	(0.35)	(0.43)	(0.43)	(0.43)
Less than High School	2.17 *	2.04 *	1.90 +	2.21 *	2.19 +	2.16 +	2.13 +
	(0.73)	(0.71)	(0.70)	(0.84)	(0.96)	(0.96)	(0.94)
Income[4]							
$35,000-$45,000	1.45	1.44	1.54	1.57	1.69	1.62	1.60
	(0.92)	(0.94)	(1.01)	(1.04)	(1.21)	(1.15)	(1.14)
25000.00	1.91	1.97	1.88	1.87	2.31	2.18	2.15
	(1.20)	(1.28)	(1.24)	(1.25)	(1.66)	(1.57)	(1.55)
Less than $17,500	2.19	2.14	2.02	1.94	2.15	2.03	1.98
	(1.32)	(1.34)	(1.27)	(1.24)	(1.48)	(1.39)	(1.36)
Missing	1.04	1.10	1.01	0.93	1.01	0.98	1.01
	(0.31)	(0.33)	(0.34)	(0.32)	(0.40)	(0.38)	(0.39)
Lifetime Residence, Stability, and Ethnic ID[5]							
Mostly on or Near Reservation	1.47 *	1.40 *	1.19	1.22	1.05	1.05	1.05
	(0.23)	(0.23)	(0.21)	(0.22)	(0.21)	(0.21)	(0.20)
Mostly off the Reservation	1.36	1.26	1.12	1.05	0.93	0.91	0.91
	(0.37)	(0.37)	(0.34)	(0.33)	(0.31)	(0.31)	(0.31)
Lived in 4 or more Child homes		1.42 +	1.31	1.24	1.32	1.31	1.31
		(0.26)	(0.26)	(0.25)	(0.30)	(0.30)	(0.30)
Attended 4 or more schools		1.23	1.07	1.06	1.10	1.16	1.17
		(0.33)	(0.31)	(0.32)	(0.35)	(0.37)	(0.38)
Tribal Lanuage Spoken in Childhood Household		1.93 *	1.83 +	1.74 +	1.54	1.47	1.48
		(0.63)	(0.59)	(0.57)	(0.53)	(0.50)	(0.50)
Cultural spirituality scale score							
Highest Score (1)			0.84	0.86	1.00	1.05	1.05
			(0.15)	(0.15)	(0.20)	(0.22)	(0.21)
Social Support							
Perceived Social Support			0.61 *	0.64 *	0.76	0.75	0.75
			(0.12)	(0.13)	(0.17)	(0.17)	(0.17)
Isolated			1.61 **	1.67 **	1.48 *	1.49 *	1.48 *
			(0.27)	(0.28)	(0.29)	(0.29)	(0.28)
Stressful Events							
Occurrence of Lifetime Event			3.36 *	3.15 +	1.92	1.83	1.82
			(1.94)	(1.85)	(1.21)	(1.17)	(1.16)
Occurrence of Traumatic Event			1.53 *	1.54 *	1.19	1.21	1.20
			(0.29)	(0.30)	(0.26)	(0.27)	(0.26)
Seen Medicine man, Traditional healer or had ceremony in past year				1.21	1.13	1.18	1.19
				(0.29)	(0.29)	(0.30)	(0.30)
Substance Use and Health Problems							
In last 30 day, smoked cigarette				1.10	1.13	1.08	1.07
				(0.22)	(0.25)	(0.24)	(0.23)
Missing				0.92	0.96	0.95	0.97
				(0.23)	(0.26)	(0.26)	(0.26)
Drank Alcohol in Past Month					0.96		
					(0.20)		
Got Drunk in Past Month						1.66 *	
						(0.36)	
Went on Drinking Spree in Past Month							1.32
							(0.46)
Missing					0.93	1.09	0.71
					(0.23)	(0.25)	(0.20)
Number of physical health problems reported as having occurred in past year that were also diagnosed by a doctor.					1.40	1.39	1.42
					(0.47)	(0.47)	(0.49)
Occurrence of at least 1 health limitation					2.95 **	3.05 **	3.04 **
					(0.55)	(0.58)	(0.58)
High Kessler Score (top 15%)					2.12 **	2.01 **	1.99 **
					(0.45)	(0.43)	(0.42)
Log Likelihood	-670.22	-651.90	-582.57	-572.96	-479.97	-479.36	-479.07
LR Chi Squared	0.11	0.13	0.23	0.24	0.36	0.36	0.36
N	1365.00	1345.00	1266.00	1249.00	1248.00	1186.00	1186.00

Note: + p < 0.10, * p < 0.05, ** p < 0.01 [1]Reference Category (RC): 40+ years; 2RC: Married; 3RC: College Degree; 4RC: $60,000; 5RC: All of life on Reservation;

Finally, model I and model II suggest support for hypothesis one because individuals who have spent most of their life on or near the reservation are nearly 50% more likely to rate their health as fair or poor than those who have spent their entire lives on the reservation [Model I: (OR=1.47, $p<0.05$), Model II: (OR=1.40, $p<0.05$)].

Model II of Table 10 has the basic demographic variables, plus childhood stability variables and tribal identity variables. Model II has the following childhood stability variables: 1) individuals who lived in four or more houses during their childhood and 2) individuals who attended four or more schools throughout their childhood. The tribal identity variables include individuals who can speak their tribal native language, individuals who had their native language spoken in their childhood household, individuals who maintain their [tribe's] values and practices and individuals whose immediate families maintain [tribal] values and practices. Age, gender, and education continue to have a similar relationship with self-rated health as in the last model. Also, in model II the participants who lived in four or more houses during their childhood are 43% more likely to rate their health as poor or fair than those who lived in three or fewer houses in their childhood (OR=1.43, $p<0.10$). Finally, participants who had their tribal language spoken in their childhood household are nearly two times more likely to rate their health as poor or fair than those who did not have the tribal language spoken in their childhood household, which suggests that every aspect of the tribal identity may not be protective against a negative health rating (hypothesis two).

For Model III, consistent with the past two models, age, gender, and education continue to have similar relationship with self-rated health. In model III, however, the measure of lifetime reservation residence loses statistical significance. Individuals whose

childhood homes used a tribal language continues to be associated with an increase in the likelihood of poor health (OR=1.83, $p<0.10$). New to the model are the religiospiritual variable, social support variables, and the variables measuring the occurrence of a stressful event. The cultural spirituality measure does not have a statistically significant relationship with health status. Confirming hypothesis four, individuals who perceive high positive social support are 39% less likely to have self-rated poor or fair health and individuals who feel socially isoloated are nearly two times more likely to belong the poor or fair health category (OR=0.61, $p<0.05$; OR=1.61, $p<0.01$). In addition, individuals who have experienced at least one life time event, such as a child being removed from their home to go live with a relative because of problems in her family, report poorer health. Such individuals are three times more likely to have poor or fair health than a participant who did not have a lifetime event occur (OR=3.36, $p<0.05$). Participants who have experienced a traumatic event are about 1.5 times more likely to have poor health status than those who have never experienced a traumatic event (OR=1.54, $p<0.05$). Model IV has findings similar to model III despite adding variables concerning attitude toward any mental health professional, utilization of mental health professional in past year, utilization of a medicine man, traditional healer, or had a ceremony performed for participant's health and well-being and cigarette and chewing tobacco use.

Models V and VII have similar findings and also find no statistical significance in regard to alcohol consumption. In both models, both younger age groups are less likely to have rated their health as poor or fair. Individuals who are never married are twice as likely to have low rated health (OR=2.1, $p<0.10$). Socially isolated participants are more

likely to have poor/fair health than socially supported individuals (OR=1.5, $p<0.05$). With regard to reported physical health and self-rated health, Northern Plains tribe members who have a physical limitation are three times more likely to report poor or fair health than those who do not have an occurrence of a physical limitation. Finally, respondents who have severe psychological distress are twice as likely to have rated their health as poor or fair as compared to those who do not have severe psychological distress.

Model VI suggests support for hypothesis five (substance use will decrease health). Individuals who have gotten drunk on alcohol in the past month are nearly two times more likely to rate their health poorly than those who have not gotten drunk in the past 30 days (OR=1.66, $p<0.05$). The remaining findings in model VI are consistent with the findings in models V and VII with regard to age, marital status, education, social isolation, physical limitation and psychological distress.

Self-Rated Health Findings: *Southwest Tribe*

Model I has the following independent variables: age, gender, marital status, education, income, employment status, and location of lifetime residence. Separated, divorced, or widowed individuals are nearly two times more likely to rate their health as poor or fair as compared to currently married individuals (OR=1.74, $p<0.01$). People who are not high school graduates as well as people who make less than $17,500 per year are twice as likely to have poor or fair health than individuals who have a college degree or individuals who make more than $60,000 per year (OR=2.45, $p<0.05$; OR=2.11, $p<0.05$). Also, individuals who did not answer the income question are about 40% less likely to rate their health as poor than those who provided the survey with their household income

(OR=0.58, $p<0.10$). Model I does not put forward any direct support for hypothesis one because none of the lifetime residence (reservation or not) variables are statistically different from one another or show a statistically significant relationship in predicting self-rated health.

Model II in Table 11 has the basic demographic variables, plus childhood stability variables and tribal identity variables. Model II has the following childhood stability variables: 1) individuals who lived in four or more houses during their childhood and 2) individuals who attended four or more schools throughout their childhood. The tribal identity variables include individuals who can speak their tribal native language, individuals who had their native language spoken in their childhood household, individuals who maintain that their [tribe's] values and practices, and individuals whose immediate families maintain [tribal] values and practices. Unfortunately, none of the tribal identity variables are statistically significant with regard to self-rated health, and thus do not lend any support to hypothesis two. Only one childhood stability variable has a statistically significant relationship—individuals who attended 4 or more schools between ages 6 and 16. During ages 6-16, participants who attended 4 or more schools are 63% less likely to rate their health poorly (OR=0.37, $p<0.05$). The marital status, education, and income variables continue to have similar odds ratios as model I, except for disappearance in the statistical significance of the missing income variable.

Table 11. Logistic Regression Results for Self-Rated Health~ *Southwest Tribe*

Predicting Poor/Fair Self-Reported Health among Southwest Tribe Models I-VII

	Model I Odds Ratios	Model II Odds Ratios	Model III Odds Ratios	Model IV Odds Ratios	Model V Odds Ratios	Model VI Odds Ratios	Model VII Odds Ratios
Age and Gender[1]							
25-39 years	0.81	0.81	0.78	0.75	1.04	1.04	1.03
	(0.14)	(0.14)	(0.15)	(0.15)	(0.22)	(0.22)	(0.22)
20-24 years	0.76	0.77	0.74	0.73	1.01	1.01	1.02
	(0.20)	(0.21)	(0.23)	(0.23)	(0.37)	(0.36)	(0.37)
Female	0.99	1.02	0.99	1.15	1.14	1.21	1.13
	(0.16)	(0.16)	(0.17)	(0.23)	(0.25)	(0.27)	(0.25)
Marital Status[2]							
Separated, Divorced, Widowed	1.74 **	1.76 **	1.68 *	1.66 *	1.90 *	1.76 *	1.77 *
	(0.35)	(0.36)	(0.37)	(0.38)	(0.50)	(0.45)	(0.45)
Never Married	1.18	1.18	1.22	1.22	1.29	1.20	1.19
	(0.23)	(0.23)	(0.26)	(0.27)	(0.30)	(0.28)	(0.28)
Education[3]							
Some College	1.79	1.87	1.81	1.92	2.79 +	2.70 +	2.58 +
	(0.76)	(0.80)	(0.87)	(0.95)	(1.62)	(1.54)	(1.43)
High School Diploma	1.79	1.86	1.87	2.09	2.84 +	2.77 +	2.70 +
	(0.75)	(0.78)	(0.89)	(1.02)	(1.63)	(1.56)	(1.48)
Less than High School	2.45 *	2.51 *	2.33 +	2.50 +	2.98 +	2.77 +	2.64 +
	(1.06)	(1.10)	(1.16)	(1.28)	(1.81)	(1.65)	(1.54)
Income[4]							
$35,000-$45,000	1.22	1.18	1.35	1.37	1.21	1.21	1.20
	(0.49)	(0.47)	(0.61)	(0.62)	(0.57)	(0.58)	(0.57)
$25,000	1.06	1.02	1.29	1.30	1.14	1.19	1.21
	(0.44)	(0.42)	(0.60)	(0.60)	(0.55)	(0.58)	(0.59)
Less than $17,500	2.11 *	2.03 +	2.19 +	2.14 +	1.50	1.52	1.51
	(0.77)	(0.74)	(0.91)	(0.89)	(0.65)	(0.68)	(0.67)
Missing	0.58 +	0.69	0.92	1.00	1.21	1.23	1.20
	(0.17)	(0.20)	(0.31)	(0.35)	(0.45)	(0.45)	(0.43)
Lifetime Residence, Stability, Ethnic ID[5]							
Mostly on or Near Reservation	1.10	1.09	1.01	0.99	1.10	1.12	1.14
	(0.18)	(0.18)	(0.18)	(0.18)	(0.23)	(0.23)	(0.24)
Mostly off the Reservation	0.94	0.89	0.81	0.87	0.78	0.77	0.80
	(0.42)	(0.44)	(0.40)	(0.44)	(0.46)	(0.45)	(0.45)
Lived in 4 or more Child homes		1.38	1.24	1.25	1.00	1.02	1.04
		(0.32)	(0.33)	(0.35)	(0.32)	(0.32)	(0.32)
Attended 4 or more schools		0.37 *	0.41 *	0.40 *	0.43 +	0.47 +	0.47 +
		(0.14)	(0.16)	(0.16)	(0.20)	(0.21)	(0.20)
Tribal Lanuage Spoken in Childhood Household		1.30	1.31	1.43	0.91	0.86	0.83
		(0.73)	(0.78)	(0.88)	(0.55)	(0.51)	(0.49)
Cultural spirituality scale score							
Highest Score (1)			0.73 +	0.71 +	0.77	0.77	0.78
			(0.14)	(0.14)	(0.16)	(0.16)	(0.16)
Social Support							
Perceived Social Support			0.90	0.91	1.11	1.08	1.06
			(0.22)	(0.22)	(0.28)	(0.28)	(0.27)
Isolated			1.51 *	1.56 *	1.27	1.30	1.30
			(0.28)	(0.29)	(0.27)	(0.28)	(0.27)
Stressful Events and Utilization of Healer							
Occurrence of Lifetime Event			2.13	2.04	1.52	1.70	1.85
			(1.21)	(1.17)	(0.88)	(1.01)	(1.10)
Occurrence of Traumatic Event			1.25	1.10	1.03	0.99	1.00
			(0.25)	(0.23)	(0.23)	(0.23)	(0.23)
Seen Medicine man, Traditional healer or had ceremony in past year				1.57 *	1.34	1.34	1.31
				(0.30)	(0.28)	(0.28)	(0.27)
Substance Use and Health Problems							
In last 30 day, smoked cigarette				1.45	1.94 +	1.73	1.65
				(0.43)	(0.68)	(0.60)	(0.57)
Missing				0.92	1.08	1.06	1.01
				(0.21)	(0.28)	(0.28)	(0.26)
Drank Alcohol in Past Month					0.70		
					(0.19)		
Got Drunk on Alcohol in Past Month						1.61	
						(0.58)	
Went on drinking Spree in Past Month							3.73 *
							(2.44)
Missing					0.65 +	0.78	1.12
					(0.16)	(0.17)	(0.59)
Number of physical health problems reported as having occurred in past year that were also diagnosed by a doctor.					2.04 *	2.14 **	2.13 **
					(0.60)	(0.62)	(0.62)
Occurrence of at least 1 health limitation					3.00 **	3.00 **	2.95 **
					(0.68)	(0.68)	(0.67)
High Kessler Score (top 15%)					2.50 **	2.40 **	2.39 **
					(0.59)	(0.57)	(0.57)
Log Likelihood	-565.62	-555.31	-473.42	-463.99	-396.28	-395.72	-394.47
LR Chi Squared	-0.05	-0.03	0.12	0.14	0.27	0.27	0.27
N	1,229	1,211	1,099	1,086	1,041	1,041	1,041

Note: + p < 0.10, * p < 0.05, ** p < 0.01

[1]Reference Category (RC): 40+ years; [2]RC: Married; [3]RC: College Degree; [4]RC: $60,000; 5RC: All of life on Reservation;

Model III incorporates the religiospiritual variable, social support variables, and the variables measuring the occurrence of a stressful event. None of the measures for the occurrence of a stressful event are statistically significant in predicting poorly rated health. There is support for hypothesis three; individuals who have strong attachment to their cultural spirituality are 27% less likely to rate their health as poor (OR=0.73, $p<0.10$). Even though the measure for perceived positive social support is not statistically significant, individuals who are feel socially isolated are nearly one and half times more likely to have poor self-rated health than those who do not feel highly isolated (OR=1.51, $p<0.05$). This finding among the socially isolated individuals does suggest indirect support for hypothesis four, which predicts that social support will decrease the likelihood of a person rating their health poorly. In models III and IV, marital status, education, income and childhood stability variables continue to have the same statistical relationship in predicting poor/fair health as in previous models.

Model IV adds the variables concerning attitude toward any mental health professional, utilization of mental health professional in past year, utilization of a medicine man, traditional healer, or had a ceremony performed for participant's health and well-being and cigarette/chewing tobacco use. The variables that do not have any statistical significance in model IV are concerning attitude toward any mental health professional, utilization of mental health professional in past year, and cigarette/chewing tobacco use; however, martial status, education, income, childhood stability, cultural spirituality, and perceived social isolation continue to have the same statistical relationship in predicting poorly rated health as the previous models. Interestingly, individuals who have utilized a medicine man, traditional healer, or had a ceremony

performed for their health in the past year are one and half times more likely to rate their health as poor as compared to those how have not had a ceremony performed in the past year. I am hesitant to assume causality of poor health here but rather, I interpret this finding as suggesting support to Southwestern tribe members as utilizing both Western medicine and traditional medicine as resources to address any health issues.

Models V through VII take into account alcohol consumption, physical health status, and psychological distress in predicting self-rated health. Notably, the significance for the utilization of a medicine man, traditional healer, or had a ceremony performed for participant's health disappears once physical status variables are introduced, which I interpret as confirmation of my inference regarding Southwest tribe members utilizing both Western and traditional medicines to address any health issues. Across the remaining models, individuals who are separated, divorced, or widowed are nearly twice as likely to have poor or fair health than those who are currently married. Also, individuals who do not have a college degree are two times more likely to have poor or fair health; and individuals who have attended four or more schools during their childhood are more than 50% less likely to report poor health than those who did not attend many schools in their childhood. Individuals who have been diagnosed by a doctor to have at least one physical health problem in the past year are twice as likely to rate their health as poor than those who have not been diagnosed by a doctor to have a physical health problem. Finally, participants who report severe psychological distress are nearly two and a half times more likely to have rated their health as poor.

Hypothesis five finds support among models V through VII that substance use will increase the likelihood of a poor health rating. In model V, individuals who currently

smoke cigarettes are twice as likely to have a poor/fair health rating as compared to those who do not currently smoke (OR=1.94, $p<0.10$). Also, in model V, the individuals who drank alcohol at least once during the past 30 days do not have a statistically significant relationship with predicting poor/fair health, but those who did not provide an answer in the survey for alcohol consumption are 35% less likely to rate their health as poor or fair than those who did answer the question on alcohol consumption. In model VI, neither the cigarette use nor the alcohol consumption (got drunk in past 30 days), have a statistically significant relationship in predicting self-rated health status. In model VII, cigarette smoking status continues to lack statistical significance, but those who have engaged in spree drinking in the past month are nearly four times more likely to rate their health as *poor* or fair than those who have not gone on a drinking spree in the past month (OR=3.73, $p<0.05$).

Overall, members of both tribes benefit from increased levels of positive social support because they are less likely to consider their health to be fair or poor (confirms hypothesis four). Also, substance use by tribal participants increases the likelihood that the participant will consider their health to be poor (confirms hypothesis five). However, the remaining three hypotheses have mixed levels of affirmation depending on the tribe. With regard to hypothesis one, tribal participants who live primarily on the reservation rate their health better than those participants who have not lived primarily on the reservation because of access to Indian Health Services. Among members of the Southwest tribe, I found no statistically significant difference between those who lived their entire lives on the reservation and those who have not. Among the members of the Northern Plains tribe, I found in at least the first two models that those who lived mostly

on the reservation or near the reservation were more likely to rate their health as poor or fair than those who have stayed on the reservation their entire lives. This difference in findings may be in part because there are more I.H.S. facilities available to Southwest tribal members than to Northern Plains tribe members.

Hypothesis two states that individuals with a strong tribal ethnic identity will be less likely to view their health status as poor. Again, the Southwest tribe demonstrated no statistical difference in predicting self-rated health. However, the members of the Northern Plains who had their tribal language spoken in their childhood home are twice as likely to rate their health as poor in three out of the seven models. Since its statistical significance disappears once physical health status is introduced, it is suggestive that the Northern Plains tribal language does not provide a cultural context within which to rate one's health as good or bad.

Hypothesis three states that both Southwest and Northern Plains tribe members who have strong attachment to their spiritual beliefs will perceive their health to be rated as excellent. The Northern Plains tribe's analysis does not find any statistical relationship between cultural spirituality and predicting self-rated health. However, the Southwest tribe does lend some support for confirming the third hypothesis. In models III and IV, individuals with high cultural spirituality about 30% less likely to rate their health poorly. Since this effect is not present in all models, it does not provide as powerful of a predictor as say marital status, but it does suggest some influence in how an individual may perceive his or her health.

Chapter 6: Discussion

After hundreds of years of colonization, American Indian people have overcome systematic genocide, overt oppression, and forced acculturation. Even though Native American people now rarely experience direct physical or aggressive confrontation by the United States government, American Indian people continue to work against the historical effects of the previously imposed policies and images. As presented in Chapter Two, individual and group identity stems from the interaction with surrounding society, and the image reflected affects the self-esteem of the group as well as individual. Also, the autonomy and self-government given to national minorities like American Indian tribes have important implications, both for self-image and politics; Kymlicka (1996) argues that tribes should be given the power to determine their future. Despite the challenges faced by American Indian tribes, Kymlicka and I argue that Native American cultures and societies have important social practices and factors that contribute to their strength and self-governing ability.

Overview of Findings

Within my analysis of the Northern Plains tribe and the Southwest tribe, both tobacco use and alcohol use were present in participants' lives and overall had a negative influence on their well-being. These substance-use findings may be related to the self-medication of the demoralized state. Even though the study finds social factors and behaviors that contribute to poor physical and psychological health, this dissertation also has a set of three major findings—three factors that contribute to lowering the odds of an undesirable health outcome. The major findings have to do with lifetime residence on the reservation, level of cultural spirituality, and perceived social support.

Substance Use

Overall, I found instances where individuals who use tobacco products (cigarettes or chewing tobacco) were twice as likely to report a negative health outcome, be it severe psychological distress or poorly rated health. Among the three dichotomous alcohol consumption variables, I found that the severe alcohol use variables (got drunk in the past month or went on a drinking spree in the past month) had two or three times the odds of predicting a severe outcome than the individuals who did not engage in high-risk drinking behavior. Specifically, among the Northern Plains tribe, individuals who participate in severe drinking are two times more likely to have high psychological distress than individuals who did not get drunk during the month. In predicting severe depression, Northern Plains tribal participants who got drunk on alcohol in the past month are nearly four times more likely to have a high depression score than those who have not gotten drunk in the past month on alcohol. In predicting self-rated health, Northern Plains individuals who got drunk in the past 30 days were one and half times more likely to report their health as poor or fair.

The Southwest tribe participants who have gotten drunk in the past month are two times more likely have severe psychological distress. In contrast to the Northern Plains tribe, the Southwest tribal members who participate in severe drinking have no statistical relationship with predicting depression; in addition, the Southwest tribal members who have had a drink at least one day this month are actually less likely to report high depression. Although this finding is counter to the "drunk Indian" stereotype, it is consistent with the Beals et al. (2003) alcohol use study on this AI-SUPERPFP data. Beals et al. (2003) found that the rates of current drinkers ranged from 12% (Southwest

women aged 45–57 years) to more than 60% (Northern Plains aged 18–29 years and 30–44 years) and that most of the Southwest sample is less likely to be current drinkers than the Northern Plains sample. Given the vast difference in alcohol consumption between tribes, it is reasonable to expect differing findings in regard to the relationship between drinking behavior and predicting health and psychological health outcomes.

Reservations—Competing Conclusions

The lifetime residence on the reservation variable works in different ways among each tribe. The tribal reservation can be a source of *both* demoralization and resilience. It can be a source of demoralization because it is a land area that each tribe was forcibly moved to and tends to be isolated from the majority of the United States population. It is also a source of resilience because it is a distinctive location within which the tribes may protect and foster their cultural norms and practices. Before going into the possible implications of the data analysis results, it is important to note one limitation of the AI-SUPERPFP data. Although it adequately represents the tribally enrolled individuals who currently reside on the reservation, it does not capture the tribally enrolled individuals who permanently moved off the reservation or never lived on the reservation.

Within the logistic regression models, before adding the independent variables of tribal ethnic identity, cultural spirituality, stressful events, and social support, the Northern Plains tribal members who lived mostly on or near the reservation are more likely to have negative health outcomes than those who lived on the reservation for their entire lives; however, once the additional independent variables were added the relationship was no longer statistically significant. This indicates that the variable measuring living near the reservation may have been picking up aspects of social

isolation, negative social support, or incidence of trauma in the model determining psychological distress and poor health.

The opposite is true for the Southwest tribe. In the first two logistic regression models the variable measuring reservation living has no statistically significant relationship with the predicted outcomes; whereas, after adding all remaining independent variables, a statistical relationship appears. This suggests that the reservation has its own independent contribution to predicting outcomes. In the Southwest, tribal members who live mostly *on* or *near* the reservation are *less* likely to have negative health related outcomes than those who lived *only on* the reservation. Given that the Southwest region of the United States has experienced more economic and urban growth than the Northern Plains region, it is possible that the tribal members of the Southwest may have additional resources and "weak ties"[5] (Granovetter, 1973) immediately off the reservation than that of the Northern Plains members to draw on that benefit their overall well-being. Both these findings provide additional evidence for the importance of exercising caution in either assuming a monolithic influence of reservation life on Native Americans lives and also the importance of not generalizing one tribe's status to another tribe.

Religious and Spiritual Beliefs

Garroutte and colleagues (2009), in their study on religious and spiritual beliefs, found high prevalence and high salience of beliefs among both tribes of the AI-SUPERPFP study and found a high prevalence of overlapping belief systems (Aboriginal, Christian,

[5] According to Granovetter, "weak ties" are a series of acquaintances in the more distant parts of an individual's social network who one's close friends (one's "strong ties") may be unaware of and who can provide information and resources to the individual; hence, Granovetter's phrase "the strength of weak ties."

and Native American Church). As a result of their findings, the cultural spirituality variable was created to measure salience of any preferred belief system(s). In the logistic regressions predicting severe psychological distress and low-rated health, in all instances in which cultural spirituality has statistical significance, strong cultural spirituality significantly lowers the likelihood of the predicted outcome. Among the Southwest tribe, strong cultural spirituality lowers the likelihood of both Kessler 6 psychological distress and low self-rated health. Among the Northern Plains tribes, strong cultural spirituality lowers the likelihood of both Kessler 6 psychological distress and depression scale score of the Kessler 6. The agreement in the Kessler 6 finding and the disagreement between depression scale and self-rated health suggest the importance and nuanced nature of salience of religiospiritual beliefs. It also gives credence to the fact that tribes themselves offer belief system(s) that benefit individual members' well-being and point to a source of resilience. It also points to the importance of further exploration of the mechanisms of religiospiritual beliefs influence among Native Americans' mental health.

Social Support

Overall, social support is also an important measure in predicting all aspects of psychological distress and self-rated health analyses, which supports the literature on sources of elevating demoralization (de Figueiredo, 1993; Rickelman, 2003; Slavney, 1999). In both tribes, individuals who feel socially isolated are abundantly more likely to have high psychological distress or low self-rated health. The measures of positive social support, such as perceived social support and instrumental support, are important in lowering the likelihood of negative outcomes, but it is not as consistent across all models and tribes as the isolation measure. The variation in the presence of the positive social

support variables imply that American Indian people do provide each other with some of the necessary social support networks needed to rise above the effects of demoralization and its consequent mental health problems. However, the strong presence of social isolation effects does illuminate the need for the increased presence of perceived positive support for those who feel isolated. This suggests the importance of further investigation of social networks and support among different American Indian peoples and resources in which tribes can fully support and foster their tribal members.

Appendices

Appendix A: Codebook
Table 12: Description of Original and Derived SUPERPFP Variables

Description of Original and Derived SUPERPFP Variables.		
VARIABLE	**DESCRIPTION**	**VALUES**
Sampling Variables		
str	Sampling stratum code	32 unique values: 51-58, 61-68, 71-78, 81-88 See Dealingwithstrata.doc The 32 sampling strata correspond to 2 genders x 4 age categories x 2 tribes x 2 field offices per tribe.
sitewt	Weight that adjusts for sampling design (probability of being selected for interview) and compensates for nonresponse.	continuous
Demographic Variables		
age	Participant's age	number of years old
sexf	Participant's gender	1 = female 0 = male
sexm	Participant's gender	1 = male 0 = female
a03	Original SUPERPFP marital status question.	See SUPERPFP codebook.
marstat	Condensed marital status	1 = married 2= separated,divorced, widowed 3 = never married
marcoh	Combination marital status and cohabitation	1 = married or cohabitating 0 = not married or cohabitating
edcatsup	Participants education level -- highest grade attended	1 = no schooling to 11th grade, 2 = 12th grade (senior yr), 3 = 1-3 yrs of college but not college graduate, 4 = college graduate, 5 = graduate/professional school, 6 = attended 1-4 yrs of vocational school
Boarding School		
e04, e04h, e04i, e05a - e05f	Original SUPERPFP variables.	See SUPERPFP codebook.
Income		
hsinc	Before taxes 1996 household income. Built from income question i01	possible values are: 0, 500, 3000, 7500, 12500, 17500, 25000, 35000, 45000, 60000
ipoverty	Whether or not household met federal poverty criterion	1 = household below poverty level, 0 = household not below poverty level

Boarding School		
e04, e04h, e04i, e05a - e05f	Original SUPERPFP variables.	See SUPERPFP codebook.
Income		
hsinc	Before taxes 1996 household income. Built from income question i01	possible values are: 0, 500, 3000, 7500, 12500, 17500, 25000, 35000, 45000, 60000
ipoverty	Whether or not household met federal poverty criterion	1 = household below poverty level, 0 = household not below poverty level
Mobility		
yronrez	Number of years lived on reservation	
yrnrrez	Number of years lived near reservation	
yroff	Number of years lived off reservation	
wherliv2	Where participant has lived most of life	1 = all of life on reservation, 2 = mostly on reservation, 3 = mostly near reservation, 4 = mostly off reservation
hse6_16	Number of houses lived in between ages 6 and 16	count
mvsch	Number of times changed school between ages 6 and 16	count
yr5comm	Number of years lived in community	1 = less than 1 year, 2 = 1-4.9yrs, 3 = 5-9.9yrs, 4 = 10-19.9yrs, 5 = 20 or more years
yr5hse	Number of years lived in house	1 = less than 1 year, 2 = 1-4.9yrs, 3 = 5-9.9yrs, 4 = 10-19.9yrs, 5 = 20 or more years
yr5place	Number of years lived in one place	1 = less than 1 year, 2 = 1-4.9yrs, 3 = 5-9.9yrs, 4 = 10-19.9yrs, 5 = 20 or more years
Occupation		
sncsemp	3-level employment status (student category broken out)	1 = student, 2 = employed, 3 = unemployed
employed	Dichotomous employment status (student combined into unemployed)	1 = employed, 0 = unemployed
f01a - f01i	Employment status. Original SUPERPFP variables.	See SUPERPFP codebook.
Parents' Education		
fh01h, fh02g	Original SUPERPFP variables.	See SUPERPFP codebook.
Relationship with Parents		
fh01b, fh02a	Original SUPERPFP variables.	See SUPERPFP codebook.

Cultural Characteristics		
Ethnic identity		
et07	How well speak tribal native language. Original SUPERPFP question.	See SUPERPFP codebook.
et09a	How important for you to maintain [tribe] values and practices. Original SUPERPFP question.	See SUPERPFP codebook.
et10a	How important is it for the members of your immediate family to maintain [tribe] values and practices. Original SUPERPFP question.	See SUPERPFP codebook.
indnid	Indian identity scale score. The higher the score, the greater was the participant's identification with Indian culture. See footnote #1 below, also see Identity.doc for details.	continuous, min = 0 max = 3
whitid	White identity scale score. The higher the score the greater was the participant's identification with White culture. See footnote #1 below, also see Identity.doc for details.	continuous, min = 0 max = 3
Language Use		
fh11, fh12	Original SUPERPFP questions.	See SUPERPFP codebook.
Military		
fh15, fh16, fh17, d05, d06a1-d06a5, d07	Original SUPERPFP questions.	See SUPERPFP codebook.
Religion/Spirituality		
cultspir	Cultural spirituality scale score. The higher the score the greater was the participant's spirituality based on items/beliefs associated with the tribes investigated. See footnote #2 below. Also see Spirituality.doc for details.	continuous, range 0 to 1
imptrad	Indicates whether Traditional spiritual beliefs were very important to participant. See Spirituality.doc for details.	1 = very important 0 = not very important
impnac	Indicates whether Native American Church beliefs were very important to participant. See Spirituality.doc for details.	1 = very important 0 = not very important
impchrs	Indicates whether Christian beliefs were very important to participant. See Spirituality.doc for details.	1 = very important 0 = not very important
spirtrd2	Indicates which particular combinations of spiritual beliefs were very important to participant. See Spirituality.doc for details.	1 = none of Traditional, Native American Church (NAC), or Christian spirtual beliefs were very important, 2 = just Traditional beliefs were very important, 3 = just NAC beliefs were very important, 4 = just Christian beliefs were very important, 5 = both Traditional and NAC beliefs were very important, 6 = both Traditional and Christian beliefs were very important, 7 = both NAC and Christian beliefs were very important, 8 = Traditional, NAC, and Christian beliefs were all very important.
spiritl	General spirituality scale score. The higher the score, the more spirituality in general was important to the participant. This is the mean of SUPERPFP variables sp01, sp02, sp03a combined with sp03b, and sp04 at back of codebook. The mean was computed for this set of 4 variables provided at least 2 had nonmissing values. See Spirituality.doc for details.	continuous, possible range: 0-3
relgcat6	Identifies the church or religious denomination preferred by the participant.	1 = Catholic, 2 = Mainline Christian, 3 = Conservative/Fundamental Christian, 4 = Latter Day Saints (LDS, Mormon), 5 = Native American Church (NAC), 6 = None. See Spirituality.doc for exactly which churches/denominations were included in these categories.

Stress/Stressful Events		
ncp	Number of community problems reported by participant. Calculated as the number of variables cs42-cs45 with values of 1 (some problems) or 2 (lot of problems). This count was calculated only for people who had no missing values for cs42-45. **Note: variables cs42-55 included in data sent.**	count, possible range: 0 - 14
nle	Number of lifetime events experienced by participant as computed from variables le01-le27. **Note: variables le01-le27 were included in the data sent.**	count, possible range: 0 - 27
nre	Number of recent events experienced by participant as computed from variables re01-re19 and re05a, re06a, and re08a. Variables re09-re19 were set to 1 or 0 to indicate whether the event had happened to the the participant (consistent with variables re01-re08a, 1= experienced and 0 = not experienced). **Variables re01-re19 and re05a, re06a, and re08a have been included in the data sent.** To take into account skipping, re05a was set to 0 if re05 = 0; re06a, re07, re08, and re08a were set to 0 if re06 = 0; re08a was set to 0 if re08 = 0. **Use included vars re09a to re09e, re10a to re10e, etc to see if events were experienced by someone other than the participant.**	count, possible range 0 - 22
nte	Number of traumatic events experienced by participant as calculated from variables tr01- tr16. **Note: variables tr01 - tr16 have been included in the data**	count, possible range 0 - 16
cs42-cs55	Community strains/problems. Original SUPERPFP questions.	See SUPERPFP codebook.
le01-le27	Life events. Original SUPERPFP questions.	See SUPERPFP codebook.
re01-re08a, re09a-re09f to re19a-re19f	Recent events. Original SUPERPFP questions.	See SUPERPFP codebook.
tr01-tr16	Traumatic events. Original SUPERPFP questions.	See SUPERPFP codebook.
Social Support		
ss_perc	Perceived social support scale score. The higher the score the greater the social support perceived by the participant. See Support.doc for details.	continuous, possible range 1-3
ss_neg	Negative social support scale score. The higher the score the greater the negative "support" reported by the participant. See Support.doc for details.	continuous, possible range 0-2
ss_instr	Instrumental social support scale score. The higher the score the greater the instrumental support reported by the participant. See Support.doc for details.	continuous, possible range 0-1
isolated	Perceived isolation scale score. The higher the score the greater the isolation perceived by the participant.	continuous, possible range 1-3

Mental Health Care/Counseling		
fs02a	Self-rated mental health status. Original SUPERPFP question.	See SUPERPFP codebook.
am01-am10	Attitudes toward mental health care. Original SUPERPFP questions.	See SUPERPFP codebook.
am11-am18	Attitudes toward traditional healers. Original SUPERPFP questions.	See SUPERPFP codebook.
sam01-sam04, sam01a, sam02a, sam03a, sam04a, hs002, hs003	Mental health service utilization. Original SUPERPFP questions.	See SUPERPFP codebook.
hs188, hs225, hs231	Use of traditional healers. Original SUPERPFP questions.	See SUPERPFP codebook.
hs023, hs189	Variables important for determining values of hs225. Original SUPERPFP questions.	See SUPERPFP codebook.
hs042, hs189	Variables important for determining values of hs231. Original SUPERPFP questions.	See SUPERPFP codebook.
Health Behaviors		
fs02	Self-rated overall health status compared to previous year. Original SUPERPFP question.	See SUPERPFP codebook.
pr08, pr13	Smoking. Original SUPERPF questions.	See SUPERPFP codebook.
pr09	Determines value of pr13. Original SUPERPFP question.	See SUPERPFP codebook.
pr15, pr18	Chewing tobacco use. Original SUPERPFP questions.	See SUPERPFP codebook.
pr16	Determines value of pr18. Original SUPERPFP question.	See SUPERPFP codebook.
Drinking Alcohol		
→ *Lifetime*		
drinker	Identifies people who have drunk alcohol sometime in their lifetime. For this variable, people who answered they have never drunk alcohol or who answered they have never had 12 or more drinks in any one year are considered nondrinkers.	1 = drinker (have had at least 12 drinks of alcohol during a single year in their life), 0 = nondrinker (have never drunk alcohol or have never had 12 or more drinks in a single year in their life)
never	Identifies people who have never had more than a sip of alcohol in their life.	1 = have never had more than a sip of alcohol in their life, 0 = have had more than a sip (includes people who have had more than a sip but never had 12 or more drinks in a year and those who have had at least 12 drinks in a year). If Drinker = 1 then Never = 0.
→ *Past Year*		
drinkyr	Whether or not participant drank alcohol in past year	1 = drank alcohol in past year, 0 = did not drink alcohol in past year
dnkmstyr	Maximum number of drinks consumed in a single day in the past year	count
cdcbngyr	Drank 5 or more drinks in a single day in the past year	1 = yes, 0 = no
drunkyr	Got drunk in past year	1 = yes, 0 = no
spreeyr	Went on a drinking spree in the past year where stayed drunk for two whole days or more	1 = yes, 0 = no
→ *Past Month*		
drinkmo	Drank alcohol in past month	1 = yes, 0 = no
cdcbngmo	Drank 5 or more drinks in a single day in the past month	1 = yes, 0 = no
drunkmo	Got drunk in past month	1 = yes, 0 = no
spreemo	Went on a drinking spree in the past month where stayed drunk for two whole days or more	1 = yes, 0 = no

Preventive Health Practices		
nphpf	Number of preventive health practices experienced in past year by female participants. This is equal to the numbe of variables pr01 to pr07 that had a value of 1. Not calculated for males. **Note: variables pr01 to pr07 have been included in the data sent.**	count, possible range: 0 - 7
nphpm	Number of preventive health practices experienced in past year by male participants. This is equal to the number of variables pr01 to pr05 that had a value of 1. Not calculated for females. **Note: variables pr01 to pr07 have been included in the data sent.**	count, possible range: 0 - 5
pr01 - pr07	Original SUPERPFP questions for preventive health checkups.	See SUPERPFP codebook.
Physical Health Care		
hs002	Used Indian Health Service in past year for care of a physical, alcohol/drug, or emotional problem. Original SUPERPFP question. See SUPERPFP codebook.	1 = yes, 0 = no
hs003	Confirmation that used Indian Health Service in past year for a physical, alcohol/drug, or emotional problem. Original SUPERPFP question. See SUPERPFP codebook.	1 = yes, 0 = no
hs004	Used Indian Health Service in past year for care of a physical health problem. Original SUPERPFP question. See SUPERPFP codebook.	1 = yes, 0 = no
hs218	Was visit to a tradtional healer in the past year for treatment of a physical health problem? Original SUPERPFP question. See SUPERPFP codebook. Whether participant was asked this question depends on skip hs196skp page 78 and skip hs217skp on page 82.	1 = yes, 0 = no
Outcome Variables		
Physical Health Conditions		
numever	Number of self-reported physical health problems reported as having ever occurred in lifetime. Determined from hh1a_ev to hh1ee_ev.	range of possible values: 0 - 31
numyr	Number of self-reported physical health problems reported as having occurred in past year. Determined from hh1a_yr to hh1ee_yr.	range of possible values: 0 - 31
numdx	Number of physical health problems reported as having ever occurred in lifetime that were also diagnosed by a doctor. Determined using hh1a_ev to hh1ee_ev and hh1a_dg to hh1ee_dg.	range of possible values: 0 - 31
numdxyr	Number of physical health problems reported as having occurred in past year that were also diagnosed by a doctor. Determined using hh1a_yr to hh1ee_yr and hh1a_dg to hh1ee_dg.	range of possible values: 0 - 31
fs03a - fs03j	Things that health problems may interfere with. Original SUPERPFP questions.	See SUPERPFP codebook.

Self-rated Overall Health Status		
fs01	Self-rated overall health status. Original SUPERPFP question.	See SUPERPFP codebook.
fs02	Self-rated overall health status compared to previous year. Original SUPERPFP question.	See SUPERPFP codebook.
Psychological Health		
fs02a	Self-rated mental health status. Original SUPERPFP question.	See SUPERPFP codebook.
hd01 - hd06	Items of Kessler high distress scale. Original SUPERPFP questions.	See SUPERPFP codebook.
hdscore	Score on Kessler high distress scale. Mean of items hd01-hd06.	continuous, possible range 0 - 4

[1] Factor analysis revealed that the variables measuring identification with Indian and White culture loaded on different factors. Since the correlation of the two factors was close to 0 (i.e. the factors were nearly orthogonal), we used the variables that loaded on these factors to create two independent scales. One scale measured how much the person followed elements of the Indian way of life and the other measured how much the person followed elements of the White way of life.

The score on the Indian identity scale (Indnid) was the mean of the response codes for the following 4 items:

et05a 1. How many special activities or traditions does you family take part in that are based on the xxxx culture
0 = not at all 1 = a few 2 = some 3 = a lot

et06a 2. To what extent do you follow the xxxx way of life?
0 = not at all 1 = a little 2 = some 3 = a lot

et09a 3. How important is it to you that you maintain a xxxx identity, and xxxx values and practices?
0 = not at all 1 = a little 2 = some what 3 = very much

et10a 4. How important is it to you that members of your immediate family maintain xxxx identities, values, and
0 = not at all 1 = a little 2 = some what 3 = very

xxxx = name of Indian tribe

The score on the White identity scale (Whitid) was the mean of the response codes for the following 4 items:

et05c 1. How many special activities or traditions does you family take part in that are based on White culture?
0 = not at all 1 = a few 2 = some 3 = a lot

et06b 2. To what extent do you follow the White-American way of life?
0 = not at all 1 = a little 2 = some 3 = a lot

et09b 3. How important is it to you that you maintain a White identity, and White values and practices?
0 = not at all 1 = a little 2 = some what 3 = very much

et10b 4. How important is it to you that members of your immediate family maintain White identities, values, and
0 = not at all 1 = a little 2 = some what 3 = very

[2] Computed as the mean of the responses to the following 10 items. There were two possible responses to each item: 0 = disagree and 1 = agree.

Please tell me how much you agree or disagree with the following statements.

sp24 -- There is balance and order in the universe
sp25 -- I am in harmony with all living things
sp26 -- I feel connected with other people in life
sp27 -- I follow the xxxx path (xxxx = tribal specific descriptor)
sp28 -- When I need to return to balance, I know what to do
sp29 -- I feel like I am living the right way
sp30 -- I give to others and receive from them in return
sp31 -- I am a person of integrity
sp32 -- I respect other people
sp33 -- I respect Mother Earth

Appendix B: Descriptive Statistics

Table 13. Unweighted Descriptives: Southwest Tribe ~ Women

UNWEIGHTED DESCRIPTIVES	Southwest Tribe: Women							
	Women 20-24 years		Women 25-34 years		Women 35-44 years		Women 45+ years	
Demographics	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age	22.22	1.45	31.24	2.87	40.84	2.88	50.34	2.99
Original Marital	3.74	1.82	3.02	1.90	2.15	1.55	2.16	1.48
Marital Status	2.38	0.91	2.03	0.94	1.59	0.77	1.57	0.71
Mar/COH	0.50	0.50	0.66	0.47	0.75	0.43	0.65	0.48
Edcatsup	2.25	0.80	2.21	0.96	2.33	1.06	2.25	1.01
Boarding Sch								
Attend Board Sch	0.55	0.50	0.68	0.47	0.74	0.44	0.89	0.32
Were you punished for using your Indian language?	0.83	0.38	0.09	0.29	0.30	0.46	0.55	0.50
could practice your culture and traditions?	0.36	0.48	0.64	0.48	0.57	0.50	0.49	0.50
Father go to BS	0.57	0.50	0.30	0.46	0.24	0.43	0.28	0.45
Mother go to BS	0.03	0.17	0.40	0.49	0.33	0.47	0.32	0.47
Other Male BS	0.07	0.25	0.02	0.15	0.01	0.10	0.02	0.16
Other Female BS	0.22	0.42	0.04	0.19	0.01	0.12	0.05	0.22
NONE	1.00	0.00	0.39	0.49	0.44	0.50	0.50	0.50
Income								
Hhld Income	16,437.50	15,584.45	18,423.08	14,675.86	23,017.16	17,856.60	24,577.35	16,673.65
Meet Fed Pov	0.61	0.49	0.53	0.50	0.43	0.50	0.33	0.47
Mobility								
Yr on Rez	17.04	6.38	24.95	8.13	32.19	10.95	39.65	13.11
Yr Nr Rez	3.02	5.84	3.22	6.42	4.51	8.37	5.40	10.52
Yr off Rez	1.60	3.00	2.62	4.34	3.61	6.43	4.75	7.74
Live most life	1.70	0.82	1.68	0.72	1.71	0.79	1.75	0.82
# of house chhood	2.28	2.32	2.18	2.91	2.54	2.18	2.52	3.21
# of schools chhood	1.02	1.83	2.55	1.03	1.11	2.13	0.89	1.72
Yr 5 comm	3.44	1.39	3.82	1.34	3.97	1.23	4.24	1.16
Yr 5 hse	2.86	1.41	2.94	1.35	3.19	1.24	3.70	1.30
Yr 5 One Place	3.73	1.40	3.70	1.36	4.03	1.24	4.08	1.21
Occupation								
Emp Status	2.20	0.69	2.27	0.56	2.23	0.48	2.33	0.50
Emp Status (0/1)	0.49	0.50	0.62	0.49	0.72	0.45	0.64	0.48
f01a	0.36	0.48	0.49	0.50	0.49	0.60	0.58	0.50
f01b	0.20	0.40	0.16	0.36	0.14	0.35	0.13	0.34
f01c	0.16	0.37	0.14	0.35	0.14	0.35	0.14	0.35
f01d	0.29	0.46	0.43	0.25	0.20	0.40	0.23	0.42
f01e	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.18
f01f	0.22	0.42	0.11	0.31	0.12	0.32	0.07	0.26
f01g	0.00	0.00	0.03	0.18	0.02	0.14	0.06	0.25
f01h	0.10	0.30	0.07	0.25	0.06	0.23	0.06	0.25
f01i	0.06	0.23	0.03	0.17	0.04	0.19	0.04	0.21
Father Educ (yrs)	19.24	25.33	27.33	36.16	19.15	32.25	13.63	27.72
Mother Educ (yrs)	17.74	22.41	18.17	29.99	28.83	15.09	5.78	17.75

	Women 20-24 years		Women 25-34 years		Women 35-44 years		Women 45+ years	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Relations w/ Father	4.11	1.06	3.87	1.22	3.63	1.25	3.80	1.23
Relations w/ Mother	4.34	0.91	4.13	1.15	4.00	1.05	4.20	1.00
Cultural Characteristics								
Ethnic Identity								
Well speak lang	1.70	0.88	2.17	0.88	2.43	0.81	2.55	0.75
Importance tribe practices/values	2.49	0.81	2.43	0.87	2.41	0.84	2.48	0.79
Importance immediate family	2.47	0.84	2.44	0.81	2.47	0.76	2.45	0.84
Indian Identity Score	2.14	0.70	2.13	0.71	2.09	0.74	2.05	0.75
White Identity Score	1.59	0.73	1.64	0.69	1.60	0.70	1.73	0.72
Language Use								
Hhld Tribe Lang	2.07	0.84	2.37	0.78	2.43	0.84	2.58	0.70
Hhld English use	1.71	0.75	1.48	0.78	1.16	0.88	0.96	0.86
Military								
Imp Fam Military	0.64	0.84	1.10	0.96	1.12	1.16	1.28	1.26
Talk about Military	0.51	0.56	0.51	0.54	0.48	0.55	0.44	0.51
Wanna Warrior			0.67	0.58	0.00	.	0.33	0.58
Active Duty	0.02	0.20	0.03	0.27	0.04	0.31	0.00	0.00
Army	1.00	0.00	0.50	0.71	0.25	0.50	0.00	0.00
Navy	0.00	0.00	0.00	0.00	0.25	0.50	0.00	0.00
Air Force	0.00	0.00	0.00	0.00	0.25	0.50	0.00	0.00
Marine Corps	0.00	0.00	0.00	0.00	0.25	0.50	0.00	0.00
Coast Guard	0.00	0.00	0.50	0.71	0.00	0.00	0.00	0.00
Exposure to combat	1.00	0.00	1.00	.	1.50	1.00	0.00	0.00
Religion/Spirituality								
Cultural Spirtuality	0.75	0.24	0.72	0.26	0.81	0.24	0.84	0.22
Traditional Beliefs	0.59	0.49	0.53	0.50	0.54	0.50	0.53	0.50
NAC beliefs	0.41	0.50	0.30	0.46	0.35	0.48	0.38	0.49
Christian beliefs	0.27	0.45	0.47	0.34	0.45	0.50	0.52	0.50
Spiritual beliefs	3.62	2.14	3.48	2.31	3.99	2.23	4.24	2.22
Gen Spirit Scale	1.98	0.68	1.80	0.80	2.19	0.68	2.26	0.70
RelgCat6	3.60	1.68	3.23	1.72	3.17	1.66	2.84	1.45
Stress/Stressful Events								
# Community Prob	8.80	4.31	9.34	4.13	10.38	3.53	10.82	3.42
# Lifetime Events	2.99	2.31	3.60	2.38	4.50	2.79	4.41	2.48
# Recent Events	1.82	1.62	1.98	1.75	1.57	1.56	1.40	1.51
# Traumatic Event	1.61	1.90	1.91	2.02	2.14	2.26	1.76	1.99
Social Support								
Perceived SS	2.64	0.45	2.47	0.53	2.35	0.53	2.34	0.55
Negative SS	0.44	0.38	0.56	0.44	0.52	0.40	0.54	0.44
Instrumental SS	0.91	0.17	0.84	0.26	0.84	0.26	0.82	0.28
Isolation Scale	1.41	0.47	1.49	0.48	1.53	0.52	1.47	0.46

	Women 20-24 years		Women 25-34 years		Women 35-44 years		Women 45+ years	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Mental Health Care/Counseling								
Self-rate MH	3.72	0.99	3.46	1.00	3.46	0.94	3.32	0.99
Attitudes toward MHC								
am01	1.10	0.69	1.10	0.71	1.25	0.67	1.12	0.74
am02	0.87	0.63	0.85	0.70	0.67	0.94	0.94	0.72
am03	1.90	1.04	2.01	1.14	2.05	1.14	1.81	1.08
am04	1.03	0.86	1.19	1.04	1.16	0.97	1.21	0.91
am05	0.75	0.44	0.75	0.43	0.73	0.45	0.69	0.46
am06	0.60	0.49	0.65	0.48	0.48	0.63	0.62	0.49
am09	0.72	0.45	0.66	0.47	0.74	0.44	0.63	0.48
am10	0.95	0.62	0.92	0.70	0.95	0.61	0.98	0.65
Attitudes toward Traditional Healers								
am11	0.80	0.41	0.66	0.48	0.75	0.44	0.70	0.46
am12	0.91	0.74	0.85	0.70	0.72	0.85	0.91	0.78
am13	0.75	0.43	0.67	0.47	0.81	0.40	0.79	0.41
am14	0.93	0.72	0.94	0.73	1.07	0.68	1.12	0.77
am15	0.73	0.45	0.59	0.49	0.64	0.48	0.62	0.49
am16	0.89	0.79	0.78	0.77	0.79	0.77	0.78	0.85
am17	0.74	0.44	0.66	0.48	0.80	0.40	0.77	0.42
am18	0.76	0.57	0.68	0.63	0.84	0.63	0.94	0.70
Mental Health Utilization								
sam01	0.63	0.48	0.62	0.49	0.62	0.49	0.60	0.49
sam02	0.08	0.28	0.14	0.34	0.18	0.38	0.16	0.37
sam03	0.03	0.18	0.11	0.32	0.12	0.33	0.21	0.41
sam04	0.24	0.43	0.28	0.45	0.32	0.47	0.36	0.48
sam01a	0.43	0.50	0.39	0.49	0.38	0.49	0.34	0.48
sam02a	0.03	0.18	0.07	0.26	0.09	0.28	0.07	0.26
sam03a	0.01	0.10	0.05	0.22	0.08	0.28	0.12	0.33
sam04a	0.11	0.31	0.19	0.40	0.21	0.41	0.24	0.43
hs002	0.38	0.49	0.45	0.50	0.50	0.50	0.56	0.50
hs003	0.24	0.43	0.48	0.35	0.43	0.50	0.40	0.49
Use of Traditional Healers								
hs188	0.17	0.38	0.32	0.47	0.36	0.48	0.34	0.47
hs225	2.00	0.00	1.50	0.71	1.00	.	1.50	0.71
hs231	2.00	0.00	1.78	0.44	1.50	0.65	1.60	0.63

	Women 20-24 years		Women 25-34 years		Women 35-44 years		Women 45+ years	
Health Behaviors	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Self-Rate Health	3.34	0.85	1.00	3.36	3.26	0.90	3.12	1.01
Smoking								
pr08	0.36	0.48	0.26	0.44	0.22	0.42	0.13	0.33
pr13	4.22	1.24	3.97	2.06	5.05	1.73	5.21	1.87
Chewing Tobacco								
pr15	0.20	0.40	0.39	0.49	0.26	0.44	0.18	0.38
pr18	0.08	0.39	0.18	0.86	0.03	0.19	0.05	0.21
Drinking Alcohol								
Lifetime								
Drinker	0.38	0.49	0.38	0.49	0.42	0.50	0.28	0.45
Never	0.23	0.42	0.19	0.40	0.20	0.40	0.32	0.47
Past Year								
Drinkyr	0.82	0.39	0.52	0.50	0.52	0.50	0.33	0.47
Dnkmstyr	6.52	4.76	9.15	7.69	4.45	3.61	6.53	5.79
Cdcbngyr	0.71	0.46	0.74	0.45	0.51	0.51	0.65	0.49
Drunkyr	0.32	0.47	0.18	0.39	0.10	0.30	0.13	0.34
Spreeyr	0.27	0.47	0.42	0.51	0.13	0.35	0.57	0.53
Past Month								
Drinkmo	0.42	0.50	0.42	0.50	0.31	0.47	0.13	0.34
Cdcbngmo	0.44	0.51	0.65	0.49	0.50	0.51	0.29	0.49
Drunkmo	0.08	0.27	0.10	0.31	0.03	0.18	0.00	0.00
Spreemo	0.33	0.58	0.57	0.53	0.33	0.58	0.00	0.00
Preventative Health Practices								
# of Prev Health Prac	3.43	1.76	3.66	2.01	3.77	2.07	4.19	1.97
Physical Health Care								
Used Ind HS	0.38	0.49	0.45	0.50	0.50	0.50	0.56	0.50
Confirmation	0.24	0.43	0.35	0.48	0.43	0.50	0.40	0.49
Used Ind HS	0.57	0.50	0.79	0.41	0.42	0.77	0.77	0.42
Visit Trad Healer	0.39	0.49	0.38	0.49	0.57	0.50	0.57	0.50

	Women 20-24 years		Women 25-34 years		Women 35-44 years		Women 45+ years	
OUTCOME VARIABLES	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Physical Health Conditions								
# LifeT Phy H prob	2.39	2.25	2.97	2.30	3.62	2.64	4.81	3.29
# Yr Phy H prob	1.30	1.40	1.60	1.57	2.02	2.04	2.90	2.44
# Ever occ P H P	1.50	1.86	1.89	2.01	2.59	2.38	3.61	3.00
# Yr Occ pHP	0.74	1.08	0.99	1.21	1.84	1.44	2.21	2.25
Health Problems								
fs03a	0.27	0.53	0.46	0.67	0.51	0.67	0.81	0.78
fs03b	0.16	0.44	0.31	0.63	0.24	0.51	0.50	0.73
fs03c	0.20	0.51	0.29	0.60	0.53	0.20	0.47	0.72
fs03d	0.17	0.45	0.31	0.61	0.60	0.31	0.61	0.80
fs03e	0.14	0.45	0.18	0.49	0.22	0.54	0.53	0.74
fs03f	0.19	0.50	0.30	0.63	0.31	0.62	0.56	0.78
fs03g	0.19	0.48	0.33	0.62	0.28	0.61	0.55	0.77
fs03i	0.18	0.48	0.26	0.59	0.19	0.48	0.35	0.66
fs03j	0.22	0.61	0.20	0.52	0.18	0.54	0.23	0.56
Self-Rated Health								
Overall Health status	3.43	0.95	3.31	0.96	3.28	0.87	3.13	1.07
Compared Health	3.34	0.85	3.36	1.00	3.26	0.90	3.12	1.01
Psychological Health								
Self-Rate MH	3.72	0.99	3.46	1.00	3.46	0.94	3.32	0.99
Kessler Scale								
hd01	0.62	0.87	0.93	1.00	0.76	1.00	0.88	1.03
hd02	0.64	0.89	0.70	1.00	0.47	0.77	0.70	0.86
hd03	0.66	1.07	0.80	1.05	0.49	0.76	0.67	0.93
hd04	0.49	0.91	0.60	0.95	0.43	0.78	0.54	0.94
hd05	1.11	1.28	1.24	1.20	0.92	1.17	1.32	1.28
hd06	0.46	0.88	0.59	1.02	0.33	0.79	0.45	0.86
Hd Score	0.66	0.71	0.81	0.77	0.57	0.61	0.76	0.71
N	104		180		216		201	

Table 14. Unweighted Descriptives: Northern Plains Tribe ~ Men

	Northern Plains Tribe: Men							
	Men 20-24 years		Men 25-34 years		Men 35-44 years		Men 45+ years	
Demographic Variables	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age	22.02	1.47	31.16	2.83	40.27	2.85	50.17	2.73
Original Marital	4.61	1.15	3.39	1.78	2.78	1.67	2.59	1.55
Marital Status	2.81	0.57	2.21	0.88	1.93	0.83	1.84	0.76
Mar/COH	0.42	0.50	0.56	0.50	0.53	0.50	0.59	0.49
Edcatsup	1.86	0.85	2.07	0.76	2.22	0.89	2.38	1.00
Boarding Sch								
Attend Board Sch	0.25	0.43	0.34	0.47	0.57	0.50	0.77	0.42
Were you punished for using your Indian language?	0.92	0.27	0.03	0.17	0.40	0.49	0.38	0.49
could practice your culture and traditions?	0.27	0.45	0.76	0.43	0.57	0.50	0.38	0.49
Father go to BS	0.42	0.50	0.31	0.46	0.37	0.48	0.43	0.50
Mother go to BS	0.01	0.10	0.48	0.50	0.49	0.50	0.46	0.50
Other Male BS	0.05	0.21	0.01	0.12	0.03	0.17	0.02	0.14
Other Female BS	0.24	0.43	0.03	0.18	0.08	0.27	0.06	0.23
NONE	1.00	0.00	0.27	0.45	0.20	0.40	0.19	0.40
Income								
Hhld Income	14,927.71	13,296.14	14,534.65	13,272.27	15,071.88	12,850.72	18,496.73	16,630.02
Meet Fed Pov	0.59	0.50	0.64	0.48	0.61	0.49	0.49	0.50
Mobility								
Yr on Rez	18.06	5.24	24.68	8.04	32.47	9.30	39.63	11.83
Yr Nr Rez	0.63	2.53	1.56	4.45	1.86	5.47	3.40	8.22
Yr off Rez	2.73	4.63	4.31	6.09	5.44	7.51	6.68	8.22
Live most life	1.66	0.81	1.85	0.83	1.81	0.84	1.82	0.76
# of house chhood	2.68	2.44	2.72	2.41	2.83	2.26	3.15	3.07
# of schools chhood	1.35	2.22	1.55	2.52	1.23	2.17	1.67	2.98
Yr 5 comm	3.62	1.31	3.86	1.32	4.16	1.18	4.05	1.32
Yr 5 hse	2.61	1.22	2.75	1.33	2.86	1.26	3.00	1.36
Yr 5 One Place	3.54	1.48	3.42	1.39	3.69	1.36	3.67	1.33
Occupation								
Emp Status	2.18	0.59	2.21	0.50	2.31	0.49	2.31	0.51
Emp Status (0/1)	0.62	0.49	0.71	0.45	0.66	0.47	0.64	0.48
f01a	0.17	0.38	0.35	0.48	0.40	0.49	0.43	0.50
f01b	0.15	0.35	0.16	0.37	0.14	0.35	0.13	0.34
f01c	0.46	0.50	0.34	0.47	0.26	0.44	0.23	0.42
f01d	0.25	0.43	0.27	0.44	0.25	0.43	0.15	0.36
f01e	0.00	0.00	0.00	0.00	0.01	0.11	0.03	0.18
f01f	0.15	0.36	0.08	0.28	0.03	0.18	0.06	0.24
f01g	0.03	0.16	0.03	0.18	0.11	0.31	0.21	0.41
f01h	0.05	0.23	0.01	0.12	0.03	0.17	0.01	0.08
f01i	0.01	0.10	0.02	0.14	0.03	0.18	0.03	0.16
Father Educ (yrs.)	33.32	34.26	31.58	34.43	39.72	38.38	32.15	36.49
Mother Educ (yrs.)	28.36	31.45	29.60	32.90	33.98	36.51	29.95	35.20
Relations w/ Father	3.60	1.30	3.90	1.11	3.79	1.19	3.98	1.09
Relations w/ Mother	4.41	0.86	4.36	0.89	4.35	0.86	4.28	0.89

	Men 20-24 years		Men 25-34 years		Men 35-44 years		Men 45+ years	
Cultural Characteristics	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Ethnic Identity								
Well speak lang	0.64	0.62	1.03	0.87	1.55	1.07	1.87	1.14
Importance tribe practices/values	2.31	0.77	2.38	0.74	2.58	0.68	2.66	0.62
Importance immediate family	2.14	0.92	2.34	0.83	2.47	0.81	2.49	0.75
Indian Identity Score	2.00	0.61	2.14	0.67	2.26	0.63	2.35	0.62
White Identity Score	1.11	0.71	1.31	0.70	1.37	0.76	1.45	0.73
Language Use								
Hhld Tribe Lang	1.38	0.90	1.79	0.97	1.99	1.02	2.12	0.95
Hhld English use	2.25	0.72	2.01	0.83	1.80	0.89	1.59	0.87
Military								
Imp Fam Military	1.02	1.12	1.40	1.11	1.66	1.14	1.94	1.14
Talk about Military	0.47	0.50	0.58	0.50	0.70	0.48	0.68	0.54
Wanna Warrior	0.55	0.50	0.70	0.46	0.83	0.38	0.72	0.45
Active Duty	0.06	0.33	0.27	0.68	0.49	0.89	0.97	1.00
Army	0.33	0.58	0.66	0.48	0.59	0.50	0.67	0.47
Navy	0.00	0.00	0.10	0.31	0.15	0.36	0.12	0.32
Air Force	0.00	0.00	0.03	0.19	0.02	0.16	0.03	0.16
Marine Corps	0.67	0.58	0.17	0.38	0.24	0.43	0.23	0.42
Coast Guard	0.00	0.00	0.03	0.19	0.02	0.16	0.00	0.00
Exposure to combat	2.00	1.00	1.48	0.78	1.39	0.74	2.27	1.23
Religion/Spirituality								
Cultural Spirtuality	0.74	0.26	0.79	0.22	0.79	0.21	0.82	0.23
Traditional Beliefs	0.44	0.50	0.52	0.50	0.62	0.49	0.56	0.50
NAC beliefs	0.20	0.40	0.24	0.43	0.28	0.45	0.28	0.45
Christian beliefs	0.16	0.37	0.22	0.42	0.27	0.45	0.27	0.45
Spiritual beliefs	2.55	2.28	2.91	2.24	3.33	2.33	3.24	2.38
Gen Spirit Scale	1.61	0.74	1.92	0.70	2.06	0.70	2.15	0.77
RelgCat6	2.13	1.84	1.84	1.44	2.14	1.70	1.74	1.33
Stress/Stressful Events								
# Community Prob	9.16	4.03	11.08	3.43	10.92	3.21	11.33	3.46
# Lifetime Events	3.25	2.14	3.89	2.86	4.61	2.85	5.29	3.24
# Recent Events	2.35	2.01	2.16	2.06	2.18	1.90	1.78	1.65
# Traumatic Event	1.70	1.91	2.27	2.50	2.55	2.49	2.67	2.70
Social Support								
Perceived SS	2.58	0.41	2.52	0.45	2.47	0.48	2.46	0.50
Negative SS	0.56	0.40	0.61	0.44	0.65	0.45	0.62	0.43
Instrumental SS	0.93	0.16	0.92	0.19	0.92	0.19	0.89	0.24
Isolation Scale	1.39	0.45	1.41	0.46	1.43	0.47	1.48	0.49

	Men 20-24 years		Men 25-34 years		Men 35-44 years		Men 45+ years	
Mental Health Care/Counseling	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Self-rate MH	4.19	0.88	4.07	0.92	3.91	1.00	3.63	1.05
Attitudes toward MHC								
am01	1.05	0.72	1.10	0.74	1.09	0.71	1.24	0.70
am02	0.78	0.66	0.85	0.73	0.97	0.67	0.97	0.70
am03	1.84	1.17	1.91	1.15	2.08	1.09	2.06	1.15
am04	1.01	0.93	1.09	0.98	1.21	0.98	1.18	0.97
am05	0.71	0.46	0.75	0.44	0.73	0.44	0.42	0.78
am06	0.54	0.50	0.63	0.48	0.71	0.45	0.67	0.47
am07	0.57	0.50	0.80	0.40	0.80	0.40	0.83	0.38
am08	0.73	0.68	0.44	0.62	0.47	0.66	0.41	0.60
am09	0.78	0.66	0.58	0.49	0.68	0.47	0.59	0.49
am10	1.84	1.17	0.76	0.71	0.99	0.73	0.80	0.69
Attitudes toward Traditional Healers								
am11	1.09	0.80	0.73	0.45	0.79	0.41	0.76	0.43
am12	0.64	0.48	1.12	0.77	1.22	0.71	1.17	0.79
am13	0.88	0.76	0.67	0.47	0.79	0.41	0.74	0.44
am14	0.56	0.50	0.89	0.68	1.09	0.67	1.01	0.73
am15	0.71	0.72	0.64	0.48	0.66	0.47	0.65	0.48
am16	0.58	0.50	0.79	0.70	0.86	0.73	0.88	0.78
am17	0.50	0.68	0.60	0.49	0.71	0.46	0.68	0.47
am18	1.09	0.80	0.73	0.69	0.82	0.66	0.82	0.79
Mental Health Utilization								
sam01	0.51	0.50	0.59	0.49	0.62	0.49	0.53	0.50
sam02	0.10	0.29	0.13	0.34	0.10	0.30	0.22	0.42
sam03	0.01	0.10	0.04	0.21	0.06	0.23	0.13	0.34
sam04	0.08	0.27	0.15	0.36	0.21	0.41	0.21	0.41
sam01a	0.27	0.44	0.23	0.42	0.33	0.47	0.24	0.43
sam02a	0.02	0.14	0.05	0.23	0.06	0.23	0.07	0.26
sam03a	0.01	0.10	0.02	0.16	0.03	0.17	0.08	0.27
sam04a	0.07	0.25	0.09	0.29	0.32	0.11	0.12	0.32
hs002	0.39	0.49	0.52	0.50	0.55	0.50	0.63	0.48
hs003	0.33	0.47	0.47	0.50	0.52	0.50	0.55	0.50
Use of Traditional Healers								
hs188	0.08	0.28	0.12	0.33	0.16	0.37	0.18	0.38
hs225	2.00	0.00	2.00	.	1.50	0.55	1.67	0.58
hs231	2.00	0.00	2.00	0.00	2.00	0.00	2.00	.

	Men 20-24 years		Men 25-34 years		Men 35-44 years		Men 45+ years	
Health Behaviors	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Self-Rate Health	3.38	0.79	3.38	0.85	3.30	0.95	3.08	0.81
Smoking								
pr08	0.80	0.40	0.69	0.46	0.71	0.45	0.77	0.42
pr13	3.33	1.64	3.98	1.96	4.76	1.73	1.88	5.02
Chewing Tobacco								
pr15	0.70	0.46	0.62	0.49	0.50	0.50	0.19	0.39
pr18	0.28	0.83	0.31	0.90	0.15	0.58	0.06	0.44
Drinking Alcohol								
Lifetime								
Drinker	0.75	0.44	0.76	0.43	0.77	0.42	0.86	0.35
Never	0.06	0.23	0.08	0.27	0.01	0.11	0.03	0.18
Past Year								
Drinkyr	0.95	0.22	0.86	0.35	0.82	0.38	0.63	0.48
Dnkmstyr	15.51	7.84	17.12	9.13	15.22	9.12	15.65	10.37
Cdcbngyr	0.97	0.16	0.96	0.20	0.89	0.32	0.89	0.31
Drunkyr	0.75	0.43	0.70	0.46	0.62	0.49	0.44	0.50
Spreeyr	0.36	0.48	0.51	0.50	0.73	0.45	0.63	0.49
Past Month								
Drinkmo	0.85	0.36	0.69	0.46	0.66	0.48	0.46	0.50
Cdcbngmo	0.93	0.26	0.85	0.36	0.88	0.32	0.87	0.34
Drunkmo	0.44	0.50	0.33	0.47	0.36	0.48	0.22	0.42
Spreemo	0.25	0.44	0.36	0.48	0.72	0.46	0.66	0.48
Preventative Health Practices								
# of Prev Health Prac	2.14	1.51	2.36	1.68	2.45	1.62	2.63	1.68
Physical Health Care								
Used Ind HS	0.39	0.49	0.52	0.50	0.55	0.50	0.63	0.48
Confirmation	0.33	0.47	0.47	0.50	0.52	0.50	0.50	0.55
Used Ind HS	0.68	0.47	0.75	0.43	0.82	0.39	0.90	0.30
Visit Trad Healer	0.13	0.34	0.20	0.40	0.21	0.41	0.27	0.45
	Men 20-24 years		Men 25-34 years		Men 35-44 years		Men 45+ years	
OUTCOME VARIABLES	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Physical Health Conditions								
# LifeT Phy H prob	2.32	2.26	2.72	2.76	3.94	3.29	5.32	3.79
# Yr Phy H prob	1.08	1.55	1.36	2.00	2.18	2.36	3.22	3.11
# Ever occ P H P	1.46	1.53	1.97	2.41	2.91	2.88	4.46	3.62
# Yr Occ pHP	0.66	0.94	0.98	1.80	1.70	2.23	2.75	2.96
Health Problems								
fs03a	0.22	0.52	0.29	0.61	0.44	0.72	0.74	0.81
fs03b	0.12	0.40	0.13	0.42	0.18	0.48	0.29	0.60
fs03c	0.14	0.48	0.09	0.31	0.20	0.52	0.31	0.62
fs03d	0.08	0.31	0.17	0.45	0.26	0.57	0.49	0.71
fs03e	0.15	0.47	0.10	0.36	0.17	0.49	0.36	0.63
fs03f	0.12	0.40	0.13	0.42	0.25	0.56	0.45	0.72
fs03g	0.16	0.47	0.16	0.47	0.25	0.60	0.45	0.74
fs03i	0.11	0.42	0.09	0.37	0.15	0.43	0.25	0.55
fs03j	0.11	0.44	0.03	0.23	0.12	0.43	0.13	0.40
Self-Rated Health								
Overall Health status	3.93	0.92	3.69	1.00	3.40	1.12	3.10	1.01
Compared Health	3.38	0.79	3.38	0.85	3.30	0.95	3.08	0.81
Psychological Health								
Self-Rate MH	4.19	0.88	4.07	0.92	3.91	1.00	3.63	1.05
Kessler Scale								
hd01	0.45	0.80	0.46	0.91	0.52	0.87	0.46	0.74
hd02	0.36	0.71	0.46	0.77	0.51	0.78	0.49	0.77
hd03	0.37	0.74	0.51	0.89	0.49	0.79	0.41	0.74
hd04	0.15	0.57	0.25	0.68	0.34	0.73	0.25	0.66
hd05	0.73	1.14	0.68	1.05	0.78	1.11	0.61	1.04
hd06	0.13	0.46	0.25	0.71	0.23	0.58	0.27	0.67
Hd Score	0.36	0.51	0.44	0.64	0.48	0.59	0.41	0.55
N	110		215		172		162	

Table 15. Unweighted Descriptives: Northern Plains ~Women

	Women 20-24 years		Women 25-34 years		Women 35-44 years		Women 45+ years	
Demographics	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age	22.07	1.41	30.98	3.06	40.49	2.77	50.45	3.58
Original Marital	4.16	1.57	3.19	1.68	2.58	1.59	2.58	1.39
Marital Status	2.58	0.78	2.12	0.83	1.81	0.78	1.75	0.64
Mar/COH	0.47	0.50	0.63	0.49	0.48	0.66	0.51	0.50
Edcatsup	2.06	0.79	2.14	0.88	2.34	0.90	2.46	1.20
Boarding Sch								
Attend Board Sch	0.34	0.47	0.45	0.50	0.56	0.50	0.73	0.44
Were you punished for using your Indian language?	0.85	0.36	0.04	0.20	0.24	0.43	0.39	0.49
could practice your culture and traditions?	0.23	0.42	0.76	0.43	0.57	0.50	0.37	0.48
Father go to BS	0.54	0.50	0.20	0.40	0.29	0.46	0.37	0.48
Mother go to BS	0.03	0.17	0.50	0.50	0.42	0.50	0.64	0.48
Other Male BS	0.06	0.24	0.02	0.14	0.02	0.16	0.03	0.17
Other Female BS	0.23	0.42	0.05	0.21	0.07	0.25	0.05	0.22
NONE	1.00	0.00	0.28	0.45	0.29	0.46	0.17	0.38
Income								
Hhld Income	15,448.28	15,589.21	13,060.61	12,352.33	16,958.86	15,299.76	16,878.70	14,995.49
Meet Fed Pov	0.67	0.47	0.70	0.46	0.60	0.49	0.55	0.50
Mobility								
Yr on Rez	18.21	5.55	25.09	7.81	31.95	11.02	39.13	13.37
Yr Nr Rez	1.27	3.81	2.13	5.95	2.81	8.12	3.34	8.12
Yr off Rez	2.03	3.63	3.29	5.17	5.13	7.87	7.38	9.89
Live most life	1.62	0.81	1.73	0.79	1.77	0.87	1.88	0.87
# of house chhood	3.05	4.54	2.95	2.83	3.16	2.88	2.84	2.43
# of schools chhood	1.14	1.95	1.26	2.58	1.21	2.52	1.12	1.81
Yr 5 comm	3.82	1.27	4.01	1.26	4.01	1.26	4.38	1.11
Yr 5 hse	2.61	1.37	2.51	1.21	2.94	1.19	3.15	1.34
Yr 5 One Place	3.59	1.49	3.62	1.38	3.87	1.35	3.94	1.23
Occupation								
Emp Status	2.04	0.76	2.25	0.61	2.28	0.58	2.39	0.54
Emp Status (0/1)	0.42	0.50	0.56	0.50	0.59	0.49	0.55	0.50
f01a	0.33	0.47	0.35	0.48	0.51	0.50	0.47	0.50
f01b	0.11	0.31	0.14	0.35	0.11	0.31	0.08	0.28
f01c	0.13	0.34	0.17	0.37	0.07	0.26	0.10	0.30
f01d	0.29	0.46	0.24	0.43	0.18	0.39	0.15	0.36
f01e	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.18
f01f	0.36	0.48	0.16	0.37	0.18	0.38	0.07	0.26
f01g	0.01	0.09	0.06	0.25	0.09	0.28	0.23	0.42
f01h	0.07	0.25	0.06	0.25	0.06	0.24	0.05	0.21
f01i	0.01	0.12	0.02	0.15	0.08	0.27	0.02	0.15
Father Educ (yrs.)	27.98	31.32	34.02	36.02	27.78	34.10	29.58	35.72
Mother Educ (yrs.)	22.77	26.82	32.92	28.66	27.22	33.99	25.95	33.26
Relations w/ Father	3.86	1.24	4.05	1.10	3.91	1.25	3.85	1.26
Relations w/ Mother	4.16	0.99	4.14	1.10	4.13	1.00	4.05	1.11

	Women 20-24 years		Women 25-34 years		Women 35-44 years		Women 45+ years	
Cultural Characteristics	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Ethnic Identity								
Well speak lang	0.53	0.65	0.81	0.84	1.52	1.16	1.77	1.19
Importance tribe practices/values	2.34	0.82	2.38	0.79	2.57	0.74	2.57	0.73
Importance immediate family	2.19	0.95	2.33	0.85	2.43	0.82	2.53	0.79
Indian Identity Score	1.98	0.69	2.07	0.66	2.26	0.67	2.30	0.65
White Identity Score	1.29	0.74	1.50	0.69	1.56	0.69	1.52	0.66
Language Use								
Hhld Tribe Lang	1.53	0.94	1.80	1.05	2.15	1.03	2.37	0.91
Hhld English use	2.19	0.77	0.80	2.00	1.78	0.90	1.62	0.91
Military								
Imp Fam Military	0.84	0.97	1.09	1.09	1.54	1.17	1.82	1.11
Talk about Military	0.52	0.54	0.56	0.53	0.62	0.51	0.62	0.53
Wanna Warrior			0.40	0.55	0.50	0.71	0.00	0.00
Active Duty	0.01	0.17	0.06	0.36	0.04	0.27	0.01	0.15
Army	1.00	0.00	0.67	0.52	0.33	0.58	1.00	0.00
Navy	0.00	0.00	0.33	0.52	0.00	0.00	0.00	0.00
Air Force	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Marine Corps	0.00	0.00	0.00	0.00	0.67	0.58	0.00	0.00
Coast Guard	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exposure to combat	1.00	0.00	1.83	0.98	2.00	1.00	1.00	0.00
Religion/Spirituality								
Cultural Spirtuality	0.75	0.22	0.76	0.25	0.82	0.21	0.81	0.22
Traditional Beliefs	0.44	0.50	0.50	0.43	0.57	0.50	0.53	0.50
NAC beliefs	0.20	0.40	0.18	0.39	0.21	0.41	0.30	0.46
Christian beliefs	0.22	0.42	0.25	0.44	0.37	0.48	0.39	0.49
Spiritual beliefs	2.74	2.25	2.77	2.08	3.37	2.33	3.64	2.55
Gen Spirit Scale	1.58	0.79	1.94	0.74	2.21	0.74	2.20	0.74
RelgCat6	1.94	1.45	1.98	1.39	1.94	1.44	1.82	1.34
Stress/Stressful Events								
# Community Prob	10.05	3.36	10.94	3.15	11.51	3.09	11.77	2.67
# Lifetime Events	3.54	2.43	4.57	2.83	4.98	3.16	5.66	3.21
# Recent Events	2.48	1.94	2.37	1.99	2.27	2.03	2.06	1.63
# Traumatic Event	1.87	2.17	2.45	2.45	2.62	2.77	2.68	2.60
Social Support								
Perceived SS	2.67	0.41	2.54	0.48	2.53	0.52	2.56	0.49
Negative SS	0.64	0.42	0.70	0.45	0.72	0.46	0.69	0.45
Instrumental SS	0.95	0.16	0.91	0.21	0.92	0.20	0.92	0.17
Isolation Scale	1.34	0.42	1.43	0.50	1.41	0.44	1.45	0.51
Mental Health Care/Counseling								
Self-rate MH	3.90	1.00	3.90	0.98	3.86	0.96	3.69	1.01
Attitudes toward MHC								
am01	1.15	0.73	1.13	0.73	1.26	0.68	1.22	0.71
am02	0.96	0.61	0.94	0.63	1.08	0.65	1.05	0.74
am03	2.04	1.03	2.08	1.12	2.17	1.07	2.09	1.19
am04	1.09	0.97	1.14	0.88	1.14	0.92	1.13	0.97
am05	0.80	0.40	0.83	0.37	0.89	0.31	0.77	0.42
am06	0.63	0.49	0.65	0.48	0.82	0.38	0.73	0.45
am09	0.54	0.50	0.52	0.50	0.53	0.50	0.51	0.50
am10	0.55	0.64	0.66	0.64	0.68	0.69	0.77	0.71
Attitudes toward Traditional Healers								
am11	0.69	0.46	0.69	0.47	0.76	0.43	0.71	0.46
am12	0.83	0.76	0.91	0.76	1.05	0.77	0.91	0.80
am13	0.66	0.48	0.73	0.44	0.72	0.45	0.73	0.45
am14	0.84	0.75	0.90	0.70	0.87	0.69	0.98	0.76
am15	0.59	0.49	0.59	0.49	0.60	0.49	0.53	0.50
am16	0.59	0.63	0.69	0.66	0.69	0.70	0.64	0.70
am17	0.59	0.49	0.65	0.48	0.72	0.45	0.69	0.46
am18	0.61	0.65	0.65	0.75	0.81	0.68	0.77	0.72
Mental Health Utilization								
sam01	0.71	0.45	0.76	0.43	0.78	0.42	0.74	0.44
sam02	0.17	0.37	0.20	0.40	0.28	0.45	0.25	0.43
sam03	0.06	0.24	0.09	0.28	0.09	0.29	0.18	0.38
sam04	0.08	0.27	0.15	0.36	0.24	0.43	0.23	0.42
sam01a	0.43	0.50	0.55	0.50	0.44	0.50	0.46	0.50
sam02a	0.08	0.28	0.13	0.34	0.15	0.36	0.14	0.34
sam03a	0.03	0.17	0.07	0.26	0.07	0.25	0.13	0.33
sam04a	0.05	0.21	0.12	0.33	0.19	0.39	0.13	0.34
hs002	0.63	0.49	0.63	0.48	0.66	0.47	0.66	0.47
hs003	0.59	0.49	0.58	0.49	0.60	0.49	0.64	0.48
Use of Traditional Healers								
hs188	0.06	0.24	0.11	0.31	0.15	0.36	0.16	0.37
hs225	2.00	0.00	1.80	0.45	1.00	1.41	2.00	0.00
hs231	2.00	0.00	1.33	1.15	1.86	0.38	1.33	1.15

	Women 20-24 years		Women 25-34 years		Women 35-44 years		Women 45+ years	
Health Behaviors	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Self-Rate Health	3.43	0.81	3.35	0.99	3.37	0.89	3.15	1.02
Smoking								
pr08	0.76	0.43	0.70	0.46	0.71	0.45	0.76	0.43
pr13	2.93	1.96	3.79	2.11	4.56	1.78	4.81	1.75
Chewing Tobacco								
pr15	0.54	0.50	0.52	0.50	0.13	0.34	0.03	0.18
pr18	0.16	0.37	0.15	0.91	0.00	0.00	0.01	0.15
Drinking Alcohol								
Lifetime								
Drinker	0.59	0.49	0.76	0.43	0.67	0.47	0.68	0.47
Never	0.04	0.21	0.04	0.19	0.06	0.24	0.07	0.25
Past Year								
Drinkyr	0.85	0.36	0.40	0.80	0.72	0.45	0.50	0.50
Dnkmstyr	11.19	8.04	12.20	7.22	13.38	10.59	10.90	6.93
Cdcbngyr	0.82	0.38	0.92	0.28	0.85	0.36	0.82	0.39
Drunkyr	0.69	0.46	0.57	0.50	0.44	0.50	0.33	0.47
Spreeyr	0.26	0.45	0.35	0.48	0.38	0.49	0.50	0.51
Past Month								
Drinkmo	0.66	0.48	0.53	0.50	0.57	0.50	0.35	0.48
Cdcbngmo	0.83	0.38	0.35	0.86	0.79	0.41	0.74	0.45
Drunkmo	0.28	0.45	0.28	0.45	0.22	0.42	0.18	0.38
Spreemo	0.18	0.39	0.36	0.48	0.58	0.50	0.52	0.51
Preventative Health Practices								
# of Prev Health Prac	3.97	1.83	4.03	1.79	3.87	1.93	4.11	1.97
Physical Health Care								
Used Ind HS	0.63	0.49	0.63	0.48	0.66	0.47	0.66	0.47
Confirmation	0.59	0.49	0.58	0.49	0.60	0.49	0.64	0.48
Used Ind HS	0.82	0.38	0.82	0.38	0.87	0.34	0.92	0.28
Visit Trad Healer	0.09	0.28	0.25	0.43	0.27	0.45	0.45	0.50
	Women 20-24 years		Women 25-34 years		Women 35-44 years		Women 45+ years	
OUTCOME VARIABLES	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Physical Health Conditions								
# LifeT Phy H prob	2.32	2.43	3.73	3.40	4.55	3.59	6.36	4.15
# Yr Phy H prob	1.39	1.69	2.20	2.38	2.44	2.34	4.06	3.31
# Ever occ P H P	1.65	1.89	3.16	3.16	3.74	3.38	5.66	4.01
# Yr Occ pHP	0.96	1.32	1.88	2.22	1.97	2.13	3.65	3.27
Health Problems								
fs03a	0.36	0.63	0.52	0.73	0.56	0.76	0.84	0.85
fs03b	0.14	0.47	0.21	0.53	0.23	0.54	0.44	0.71
fs03c	0.13	0.43	0.18	0.47	0.22	0.54	0.45	0.71
fs03d	0.23	0.56	0.34	0.66	0.37	0.70	0.68	0.84
fs03e	0.14	0.44	0.19	0.49	0.22	0.52	0.57	0.83
fs03f	0.13	0.45	0.22	0.53	0.27	0.57	0.63	0.82
fs03g	0.24	0.55	0.31	0.61	0.30	0.62	0.68	0.86
fs03i	0.16	0.49	0.19	0.49	0.19	0.47	0.47	0.69
fs03j	0.09	0.39	0.11	0.41	0.10	0.37	0.22	0.50
Self-Rated Health								
Overall Health status	3.45	1.03	1.02	3.27	3.34	1.00	2.96	1.06
Compared Health	3.43	0.81	3.35	0.99	3.37	0.89	3.15	1.02
Psychological Health								
Self-Rate MH	3.90	1.00	3.90	0.98	3.86	0.96	3.69	1.01
Kessler Scale								
hd01	0.52	0.85	0.60	0.86	0.58	0.84	0.70	0.96
hd02	0.44	0.77	0.54	0.84	0.39	0.65	0.60	0.86
hd03	0.46	0.75	0.53	0.88	0.43	0.76	0.48	0.80
hd04	0.24	0.60	0.27	0.69	0.29	0.64	0.29	0.67
hd05	0.64	1.00	0.70	1.08	0.58	0.99	0.58	0.95
hd06	0.17	0.52	0.71	0.31	0.28	0.69	0.36	0.76
Hd Score	0.41	0.54	0.49	0.62	0.43	0.57	0.50	0.65
N	138		219		164		177	

Table 16. Unweighted Descriptives: Southwestern Tribe ~ Men

	Men 20-24 years		Men 25-34 years		Men 35-44 years		Men 45+ years	
Demographics	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Age	21.99	1.45	31.66	2.63	41.11	2.95	50.04	2.87
Original Marital	4.13	1.65	3.00	1.90	2.20	1.69	1.90	1.32
Marital Status	2.57	0.82	2.02	0.94	1.63	0.85	1.49	0.67
Mar/COH	0.48	0.50	0.62	0.49	0.74	0.44	0.68	0.47
Edcatsup	2.05	0.72	2.14	1.13	2.17	0.93	2.32	1.17
Boarding Sch								
Attend Board Sch	0.57	0.50	0.68	0.47	0.80	0.40	0.93	0.26
Were you punished for using your Indian language?	0.75	0.44	0.23	0.42	0.33	0.47	0.54	0.50
could practice your culture and traditions?	0.45	0.50	0.75	0.44	0.58	0.50	0.47	0.50
Father go to BS	0.52	0.50	0.37	0.48	0.29	0.45	0.30	0.46
Mother go to BS	0.03	0.18	0.43	0.50	0.30	0.46	0.32	0.47
Other Male BS	0.03	0.18	0.04	0.19	0.20	0.04	0.04	0.19
Other Female BS	0.16	0.37	0.05	0.22	0.05	0.22	0.03	0.18
NONE	1.00	0.00	0.36	0.48	0.50	0.50	0.54	0.50
Income								
Hhld Income	24,294.52	17,009.16	21,645.04	16,270.73	22,091.27	18,218.83	26,465.03	19,664.05
Meet Fed Pov	0.40	0.49	0.41	0.49	0.48	0.50	0.35	0.48
Mobility								
Yr on Rez	17.62	5.40	25.07	8.23	34.15	10.12	39.63	12.29
Yr Nr Rez	2.24	4.87	3.48	7.04	3.33	7.28	4.55	8.53
Yr off Rez	1.60	2.79	2.50	3.65	3.24	5.53	5.47	7.61
Live most life	1.71	0.73	1.74	0.75	1.59	0.75	1.78	0.81
# of house chhood	2.45	2.11	2.10	1.83	1.97	1.85	2.41	2.73
# of schools chhood	1.28	2.00	1.00	2.15	0.73	1.79	0.96	2.04
Yr 5 comm	3.48	1.23	3.80	1.34	4.09	1.21	4.16	1.22
Yr 5 hse	2.74	1.28	2.99	1.34	1.22	3.36	3.62	1.34
Yr 5 One Place	3.39	1.39	3.59	1.37	4.04	1.24	3.84	1.33
Occupation								
Emp Status	2.16	0.61	2.24	0.52	2.23	0.47	2.29	0.48
Emp Status (0/1)	0.60	0.49	0.67	0.47	0.73	0.45	0.68	0.47
f01a	0.38	0.49	0.49	0.50	0.54	0.50	0.59	0.49
f01b	0.19	0.39	0.31	0.11	0.11	0.31	0.14	0.35
f01c	0.31	0.47	0.28	0.45	0.25	0.44	0.24	0.43
f01d	0.22	0.42	0.28	0.45	0.22	0.41	0.23	0.42
f01e	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.18
f01f	0.23	0.42	0.11	0.31	0.06	0.23	0.06	0.25
f01g	0.03	0.18	0.04	0.20	0.10	0.30	0.13	0.34
f01h	0.06	0.24	0.04	0.19	0.03	0.17	0.01	0.11
f01i	0.01	0.11	0.01	0.12	0.01	0.12	0.01	0.11
Father Educ (yrs.)	19.15	24.57	29.85	36.35	23.43	34.80	12.13	26.40
Mother Educ (yrs.)	21.32	27.46	26.81	35.91	16.60	30.33	7.07	19.52
Relations w/ Father	3.76	1.28	3.74	1.19	3.79	1.15	3.54	1.08
Relations w/ Mother	4.32	1.00	4.20	1.02	4.30	0.95	4.22	0.87
Cultural Characteristics								
Ethnic Identity								
Well speak lang	1.74	1.07	2.43	0.80	2.50	0.82	2.73	0.57
Importance tribe practices/values	2.38	0.79	2.37	0.86	2.39	0.89	2.48	0.77
Importance immediate family	2.52	0.84	2.39	0.80	2.26	0.92	2.30	0.81
Indian Identity Score	2.08	0.75	2.14	0.63	1.98	0.78	2.07	0.60
White Identity Score	1.53	0.69	0.76	1.46	1.63	0.67	1.58	0.73
Language Use								
Hhld Tribe Lang	2.08	0.80	2.61	0.64	2.46	0.77	2.67	0.66
Hhld English use	1.79	0.79	1.48	0.80	1.25	0.79	1.07	0.87

	Men 20-24 years		Men 25-34 years		Men 35-44 years		Men 45+ years	
Military	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Imp Fam Military	0.91	1.09	1.19	1.13	1.43	1.21	1.46	1.18
Talk about Military	0.59	0.52	0.67	0.52	0.56	0.55	0.46	0.53
Wanna Warrior	0.54	0.50	0.52	0.50	0.51	0.50	0.47	0.50
Active Duty	0.02	0.22	0.19	0.57	0.25	0.64	0.62	0.90
Army	1.00	0.00	0.53	0.52	0.37	0.50	0.63	0.49
Navy	0.00	0.00	0.07	0.26	0.05	0.23	0.00	0.00
Air Force	0.00	0.00	0.00	0.00	0.05	0.23	0.08	0.27
Marine Corps	0.00	0.00	0.40	0.51	0.53	0.51	0.29	0.46
Coast Guard	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exposure to combat	1.00	0.00	2.07	0.88	1.68	1.00	2.20	1.03
Religion/Spirituality								
Cultural Spirtuality	0.75	0.24	0.74	0.26	0.82	0.23	0.84	0.22
Traditional Beliefs	0.52	0.50	0.53	0.50	0.55	0.50	0.57	0.50
NAC beliefs	0.35	0.48	0.33	0.47	0.33	0.47	0.32	0.47
Christian beliefs	0.22	0.42	0.26	0.44	0.40	0.49	0.43	0.50
Spiritual beliefs	3.26	2.12	3.27	2.20	3.83	2.25	3.86	2.55
Gen Spirit Scale	1.85	0.72	1.89	0.73	2.07	0.78	2.16	0.66
RelgCat6	3.26	1.90	3.01	1.81	2.92	1.52	2.98	1.50
Stress/Stressful Events								
# Community Prob	8.74	3.52	9.34	3.87	10.24	3.81	9.86	4.31
# Lifetime Events	3.28	2.18	3.29	2.55	3.75	2.40	3.84	2.42
# Recent Events	1.84	1.69	1.72	1.93	1.19	1.50	1.16	1.32
# Traumatic Event	1.98	2.07	2.01	2.32	1.73	2.26	1.67	1.95
Social Support								
Perceived SS	2.39	0.48	2.27	0.51	2.26	0.54	2.22	0.58
Negative SS	0.53	0.40	0.50	0.44	0.51	0.45	0.49	0.43
Instrumental SS	0.84	0.23	0.75	0.30	0.75	0.30	0.71	0.34
Isolation Scale	1.47	0.45	1.60	0.52	1.55	0.49	1.61	0.51
Mental Health Care/Counseling								
Self-rate MH	3.94	0.92	3.60	0.99	3.64	1.03	3.50	0.89
Attitudes toward MHC								
am01	0.90	0.79	1.04	0.70	0.93	0.75	0.99	0.69
am02	0.60	0.70	0.82	0.65	0.84	0.70	0.73	0.89
am03	1.70	1.13	1.94	1.15	1.82	1.13	1.71	1.04
am04	1.22	0.88	1.26	1.05	1.31	1.07	1.29	1.03
am05	0.62	0.49	0.66	0.48	0.66	0.47	0.70	0.46
am06	0.48	0.50	0.66	0.48	0.60	0.49	0.63	0.48
am09	0.64	0.48	0.67	0.47	0.65	0.48	0.79	0.41
am10	0.69	0.63	0.93	0.65	0.93	0.73	1.06	0.73
Attitudes toward Traditional Healers								
am11	0.62	0.49	0.76	0.43	0.69	0.47	0.77	0.43
am12	0.94	0.79	1.04	0.71	0.97	0.78	1.18	0.74
am13	0.58	0.50	0.72	0.45	0.78	0.42	0.42	0.77
am14	0.70	0.71	0.98	0.71	1.16	0.77	1.18	0.72
am15	0.62	0.49	0.69	0.46	0.65	0.48	0.66	0.48
am16	0.76	0.70	0.89	0.73	0.78	0.84	0.86	0.79
am17	0.59	0.50	0.68	0.47	0.66	0.48	0.81	0.40
am18	0.61	0.65	0.77	0.65	0.85	0.76	1.00	0.71
Mental Health Utilization								
sam01	0.54	0.50	0.43	0.50	0.48	0.50	0.42	0.49
sam02	0.05	0.22	0.10	0.31	0.09	0.29	0.12	0.32
sam03	0.04	0.19	0.07	0.26	0.09	0.29	0.10	0.31
sam04	0.21	0.41	0.29	0.45	0.38	0.49	0.33	0.47
sam01a	0.26	0.44	0.24	0.43	0.27	0.45	0.18	0.39
sam02a	0.02	0.16	0.07	0.25	0.05	0.21	0.06	0.24
sam03a	0.01	0.11	0.05	0.22	0.06	0.24	0.04	0.21
sam04a	0.11	0.31	0.16	0.37	0.23	0.42	0.15	0.36
hs002	0.29	0.46	0.47	0.50	0.46	0.50	0.41	0.49
hs003	0.20	0.40	0.31	0.46	0.34	0.48	0.28	0.45
Use of Traditional Healers								
hs188	0.25	0.43	0.35	0.48	0.34	0.48	0.32	0.47
hs225	1.00	0.00	1.25	0.46	1.50	0.76	1.78	0.44
hs231	1.50	0.58	1.11	0.60	1.80	0.42	1.90	0.32

	Men 20-24 years		Men 25-34 years		Men 35-44 years		Men 45+ years	
Health Behaviors	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Self-Rate Health	3.32	0.89	3.43	0.93	3.34	0.96	3.28	0.89
Smoking								
pr08	0.60	0.49	0.42	0.50	0.39	0.49	0.40	0.49
pr13	3.36	2.02	4.32	1.87	4.77	1.87	5.09	1.80
Chewing Tobacco								
pr15	0.54	0.50	0.75	0.43	0.67	0.47	0.62	0.49
pr18	0.23	0.77	0.34	1.08	0.24	0.53	0.22	0.56
Drinking Alcohol								
Lifetime								
Drinker	0.60	0.49	0.70	0.46	0.73	0.45	0.73	0.45
Never	0.13	0.34	0.09	0.29	0.10	0.30	0.08	0.28
Past Year								
Drinkyr	0.88	0.33	0.72	0.45	0.61	0.49	0.60	0.49
Dnkmstyr	13.70	7.51	14.10	14.88	12.02	8.43	11.60	13.16
Cdcbngyr	0.91	0.29	0.89	0.32	0.87	0.34	0.76	0.43
Drunkyr	0.64	0.48	0.44	0.50	0.38	0.49	0.34	0.48
Spreeyr	0.42	0.50	0.53	0.50	0.56	0.50	0.38	0.49
Past Month								
Drinkmo	0.60	0.49	0.52	0.50	0.41	0.50	0.46	0.50
Cdcbngmo	0.87	0.35	0.76	0.43	0.75	0.44	0.74	0.44
Drunkmo	0.24	0.43	0.16	0.37	0.17	0.38	0.14	0.35
Spreemo	0.33	0.49	0.56	0.51	0.53	0.51	0.40	0.51
Preventative Health Practices								
# of Prev Health Prac	1.85	1.55	1.97	1.67	2.14	1.65	2.45	1.68
Physical Health Care								
Used Ind HS	0.29	0.46	0.47	0.50	0.46	0.50	0.41	0.49
Confirmation	0.20	0.40	0.31	0.46	0.34	0.48	0.28	0.45
Used Ind HS	0.64	0.49	0.54	0.50	0.72	0.45	0.72	0.45
Visit Trad Healer	0.33	0.47	0.50	0.50	0.50	0.50	0.45	0.50
OUTCOME VARIABLES								
Physical Health Conditions								
# LifeT Phy H prob	2.12	2.00	2.86	2.42	3.81	3.06	4.02	2.90
# Yr Phy H prob	0.92	1.49	1.40	1.49	2.09	2.49	2.25	2.07
# Ever occ P H P	1.07	1.56	1.71	1.76	2.24	2.61	2.84	2.65
# Yr Occ pHP	0.44	0.92	0.84	1.21	1.25	2.20	1.61	1.83
Health Problems								
fs03a	0.39	0.67	0.51	0.74	0.65	0.72	0.72	0.72
fs03b	0.13	0.43	0.32	0.64	0.34	0.62	0.36	0.61
fs03c	0.13	0.43	0.22	0.57	0.29	0.60	0.29	0.54
fs03d	0.22	0.56	0.22	0.56	0.36	0.67	0.43	0.65
fs03e	0.14	0.44	0.15	0.46	0.22	0.51	0.26	0.51
fs03f	0.16	0.51	0.31	0.64	0.33	0.62	0.38	0.66
fs03g	0.16	0.55	0.22	0.56	0.32	0.66	0.35	0.64
fs03i	0.16	0.53	0.18	0.51	0.22	0.54	0.25	0.53
fs03j	0.15	0.52	0.14	0.49	0.17	0.50	0.23	0.55
Self-Rated Health								
Overall Health status	3.39	0.98	3.56	1.04	3.27	1.01	3.29	0.89
Compared Health	3.32	0.89	3.43	0.93	3.34	0.96	3.28	0.89
Psychological Health								
Self-Rate MH	3.94	0.92	3.60	0.99	3.64	1.03	3.50	0.89
Kessler Scale								
hd01	0.57	0.95	0.92	0.99	0.80	1.02	0.72	0.97
hd02	0.59	0.93	0.49	0.76	0.52	0.83	0.54	0.84
hd03	0.70	1.05	0.49	0.81	0.71	0.98	0.64	0.89
hd04	0.37	0.90	0.54	0.91	0.45	0.87	0.46	0.83
hd05	1.45	1.40	1.21	1.13	0.94	1.11	0.97	1.24
hd06	0.22	0.63	0.39	0.82	0.45	0.91	0.34	0.78
Hd Score	0.64	0.62	0.66	0.59	0.65	0.73	0.61	0.69
N	178		141		140		156	

Appendix C: Chi-Squared Matrices

Table 17. Kessler 6 Chi-Squared Matrix

Chi-Squared Matrix: Kessler 6 Questions ~ Group #1	Northern Plains tribe - Female - Age 15-24 yrsnptribe==1 & sexf==1 & agecat1==1	Northern Plains Tribe - Male - Age 15-24 nptribe==1 & sexm==1 & agecat1==1,	Southwest Tribe - Female - Age 15-24 swtribe==1 & sexf==1 & agecat1==1,	Southwest Tribe - Male - Age 15-24 swtribe==1 & sexm==1 & agecat1==1,	Northern Plains Tribe Female Age 25-54 nptribe==1 & sexf==1 & agecat2==1	Northern Plains Tribe Male Age 25-54 nptribe==1 & sexm==1 & agecat2==1,	Southwest Tribe Female Age 25-54 swtribe==1 & sexf==1 & agecat2==1,	Southwest Tribe Male Age 25-54 swtribe==1 & sexm==1 & agecat2==1,
Demographic Variables								
Age								
Marital status								
Married/Cohabit								
Education					x	x	x	x
Boarding School								
Attend Board					x			x
Punish 4 Lang							x	
Practice Culture					x			
Relative Attended								
Income								
Income					x	x	x	x
Poverty line								
Mobility								
Yr off Rez		x					x	
Yrs lived inCommunity								
Yrs lived in House								
Yrs live in 1 place				x				
Lived life on rez			x				x	
# Homes 6-16					x			x
# Sch 6-16								x
Occupation								
Stud/Employed					x	x	x	x
employed								

Chi-Squared Matrix: Kessler 6 Questions ~ Group #2	Northern Plains tribe - Female - Age 15-24 yrsnptribe==1 & sexf==1 & agecat1==1	Northern Plains Tribe - Male - Age 15-24 nptribe==1 & sexm==1 & agecat1==1,	Southwest Tribe - Female - Age 15-24 swtribe==1 & sexf==1 & agecat1==1,	Southwest Tribe - Male - Age 15-24 swtribe==1 & sexm==1 & agecat1==1,	Northern Plains Tribe Female Age 25-54 nptribe==1 & sexf==1 & agecat2==1	Northern Plains Tribe Male Age 25-54 nptribe==1 & sexm==1 & agecat2==1,	Southwest Tribe Female Age 25-54 swtribe==1 & sexf==1 & agecat2==1,	Southwest Tribe Male Age 25-54 swtribe==1 & sexm==1 & agecat2==1,
Parents' Education								
Father Education			x				x	
Mother Education					?		x	
Relationship with Parents								
Father relationship				x				x
Mother relationship			?			x		x
Cultural Characteristics								
Ethnic identity								
Speak Lang			x					
Maintain T & V								
Family T & V								
Indian Identity								x
White Identity								
Language Use								
Tribal Lang Ch					x		x	
English Childhd			x					
Military								
Imp Military P								
Share War Stry								
Be Warrior								
Active Duty								
Combat Exp								
Religion/Spirituality								
Cultural Spitual			x		x		x	
Stress/Stressful Events								
#CommProbs	x		x					
#LifeEvents	x					x		x
#RecentEvent		x				x		x
#TramaEvent								
Social Support								
ss_perc	x	x		x	x	x		x
ss_neg	x	x	x		x	x		x
ss_instr		x	x		x	x	x	x
isolated	x	x	x		x	x	x	x

Chi-Squared Matrix: Kessler 6 Questions ~ Group #3	Northern Plains tribe - Female - Age 15-24 yrsnptribe==1 & sexf==1 & agecat1==1	Northern Plains Tribe - Male - Age 15-24 nptribe==1 & sexm==1 & agecat1==1,	Southwest Tribe - Female - Age 15-24 swtribe==1 & sexf==1 & agecat1==1,	Southwest Tribe - Male - Age 15-24 swtribe==1 & sexm==1 & agecat1==1,	Northern Plains Tribe Female Age 25-54 nptribe==1 & sexf==1 & agecat2==1	Northern Plains Tribe Male Age 25-54 nptribe==1 & sexm==1 & agecat2==1,	Southwest Tribe Female Age 25-54 swtribe==1 & sexf==1 & agecat2==1,	Southwest Tribe Male Age 25-54 swtribe==1 & sexm==1 & agecat2==1,
Mental Health Care/Counseling								
Attitude - MH Profs								
Pref AIAN Counselor								
Pref Gender Coun	x				x			
Family Dr Help			?					
Family Dr Comfort								
Att 2 Trad Healer								
Att 2 Pastor/Priest								
Att 2 NAC								
Att 2 12-Step								
Seek Help 4 MH	x					?		
Seek Help in past YR	x					x	x	
Trad Healer- Past Yr							x	
Help from Trad Heal								
Ever Drug Problem	x	x			x	x	x	x
# Seen Trad Healer								
Ever Emotion Prob	x		x	x	x	x	x	x
Health Behaviors								
Ever smoke Cig						?		
Smoke Cig Now								
Ever Chew Tob								
Chew Tobacoo Now							x	
Health Behaviors								
Drinking Alcohol								
→ Lifetime								
drinker	x							
never								x
→ Past Year								
drinkyr	x				x		x	x
Drank >5 in Day	x							
Got Drunk					x	x	x	x
Drunk 4 2 more day	x		x	x		x	x	
Alcohol								
→ Past Month								
drinkmo				x				x
Drank >5 in Day								
Got Drunk			x	x	x	x	x	x
Drunk 4 2 more day					x			

Chi-Squared Matrix: Kessler 6 Questions ~ Group #4	Northern Plains tribe - Female - Age 15-24 yrsnptribe==1 & sexf==1 & agecat1==1	Northern Plains Tribe - Male - Age 15-24 nptribe==1 & sexm==1 & agecat1==1,	Southwest Tribe - Female - Age 15-24 swtribe==1 & sexf==1 & agecat1==1,	Southwest Tribe - Male - Age 15-24 swtribe==1 & sexm==1 & agecat1==1,	Northern Plains Tribe Female Age 25-54 nptribe==1 & sexf==1 & agecat2==1	Northern Plains Tribe Male Age 25-54 nptribe==1 & sexm==1 & agecat2==1,	Southwest Tribe Female Age 25-54 swtribe==1 & sexf==1 & agecat2==1,	Southwest Tribe Male Age 25-54 swtribe==1 & sexm==1 & agecat2==1,
Preventive Health Practices								
Number					x			
Physical Health Care								
Used I.HS 4 Alc/Drug								x
Confirmed used I.HS								
Used I.HS for Physical		x						
Trad Healer- Physical					?			
Outcome Variables								
Physical Health Conditions								
LifePhysProb	x		x	x		x		x
YrPhysProb	x		x		x	x	x	x
Dr_LifePhysProb					x	x	x	x
Dr_YrPhysProb			x		x	x	x	x
Self-rated Overall Health Status								
Self-Rated Health	x		x	x	x	x	x	x
Psychological Health								
Self-Rated Mental Health								

Table 18. Depression Questions Chi-Squared Matrix

Chi-Squared Matrix: Depression Questions ~ Group #1	Northern Plains tribe - Female - Age 15-24 yrsnptribe==1 & sexf==1 & agecat1==1	Northern Plains Tribe - Male - Age 15-24 nptribe==1 & sexm==1 & agecat1==1,	Southwest Tribe - Female - Age 15-24 swtribe==1 & sexf==1 & agecat1==1,	Southwest Tribe - Male - Age 15-24 swtribe==1 & sexm==1 & agecat1==1,	Northern Plains Tribe Female Age 25-54 nptribe==1 & sexf==1 & agecat2==1	Northern Plains Tribe Male Age 25-54 nptribe==1 & sexm==1 & agecat2==1,	Southwest Tribe Female Age 25-54 swtribe==1 & sexf==1 & agecat2==1,	Southwest Tribe Male Age 25-54 swtribe==1 & sexm==1 & agecat2==1,
Demographic Variables								
Age						x		
Marital status								
Married/Cohabit								
Education	x				x	x	x	x
Boarding School								
Attend Board								
Punish 4 Lang	x							x
Practice Culture								
Relative Attended							x	x
Income								
Income					x	x	x	x
Poverty line					x	x	x	x
Mobility								
Yr off Rez			?					
Yrs lived inCommunity								
Yrs lived in House								
Yrs live in 1 place				x				
Lived life on rez							x	
# Homes 6-16								
# Sch 6-16								
Occupation								
Stud/Employed				x	x	x	x	x
employed				x	x	x	x	x
Parents' Education								
Father Education			x				x	
Mother Education					x	x	x	

Chi-Squared Matrix: Depression Questions ~ Group #2	Northern Plains tribe - Female - Age 15-24 yrsnptribe==1 & sexf==1 & agecat1==1	Northern Plains Tribe - Male - Age 15-24 nptribe==1 & sexm==1 & agecat1==1,	Southwest Tribe - Female - Age 15-24 swtribe==1 & sexf==1 & agecat1==1,	Southwest Tribe - Male - Age 15-24 swtribe==1 & sexm==1 & agecat1==1,	Northern Plains Tribe Female Age 25-54 nptribe==1 & sexf==1 & agecat2==1	Northern Plains Tribe Male Age 25-54 nptribe==1 & sexm==1 & agecat2==1,	Southwest Tribe Female Age 25-54 swtribe==1 & sexf==1 & agecat2==1,	Southwest Tribe Male Age 25-54 swtribe==1 & sexm==1 & agecat2==1,
Relationship with Parents								
Father relationship								x
Mother relationship			x				?	x
Cultural Characteristics								
Ethnic identity								
Speak Lang			x					
Maintain T & V								
Family T & V								
Indian Identity								
White Identity								
Language Use								
Tribal Lang Ch		x	x			x	x	
English Childhd								
Military								
Imp Military P			?				x	
Share War Stry								
Be Warrior								x
Active Duty	x							
Combat Exp							x	
Religion/Spirituality								
Cultural Spitual		x			x	x	x	
Stress/Stressful Events								
#CommProbs								
#LifeEvents						x		
#RecentEvent		x						
#TramaEvent								
Social Support								
ss_perc				x	x	x	x	x
ss_neg	x			x	x	x		x
ss_instr		x	x		x	x	x	x
isolated	x	x			x	x	x	x

Chi-Squared Matrix: Depression Questions ~ Group #3	Northern Plains tribe - Female - Age 15-24 yrsnptribe==1 & sexf==1 & agecat1==1	Northern Plains Tribe - Male - Age 15-24 nptribe==1 & sexm==1 & agecat1==1,	Southwest Tribe - Female - Age 15-24 swtribe==1 & sexf==1 & agecat1==1,	Southwest Tribe - Male - Age 15-24 swtribe==1 & sexm==1 & agecat1==1,	Northern Plains Tribe Female Age 25-54 nptribe==1 & sexf==1 & agecat2==1	Northern Plains Tribe Male Age 25-54 nptribe==1 & sexm==1 & agecat2==1,	Southwest Tribe Female Age 25-54 swtribe==1 & sexf==1 & agecat2==1,	Southwest Tribe Male Age 25-54 swtribe==1 & sexm==1 & agecat2==1,
Mental Health Care/Counseling								
Attitude - MH Profs								
Pref AIAN Counselor				x			x	
Pref Gender Coun					x			
Family Dr Help							x	
Family Dr Comfort	x		x					
Att 2 Trad Healer								
Att 2 Pastor/Priest								
Att 2 NAC		x						
Att 2 12-Step								
Seek Help 4 MH							x	
Seek Help in past YR						x		
Trad Healer- Past Yr								
Help from Trad Heal								
Ever Drug Problem	x	x				x	x	x
# Seen Trad Healer								
Ever Emotion Prob	x		x	x	x	x	x	x
Health Behaviors								
Ever smoke Cig		x						
Smoke Cig Now				x				
Ever Chew Tob						x	x	
Chew Tobacco Now							x	

Chi-Squared Matrix: Depression Questions ~ Group #4	Northern Plains tribe - Female - Age 15-24 yrsnptribe==1 & sexf==1 & agecat1==1	Northern Plains Tribe - Male - Age 15-24 nptribe==1 & sexm==1 & agecat1==1,	Southwest Tribe - Female - Age 15-24 swtribe==1 & sexf==1 & agecat1==1,	Southwest Tribe - Male - Age 15-24 swtribe==1 & sexm==1 & agecat1==1,	Northern Plains Tribe Female Age 25-54 nptribe==1 & sexf==1 & agecat2==1	Northern Plains Tribe Male Age 25-54 nptribe==1 & sexm==1 & agecat2==1,	Southwest Tribe Female Age 25-54 swtribe==1 & sexf==1 & agecat2==1,	Southwest Tribe Male Age 25-54 swtribe==1 & sexm==1 & agecat2==1,
Health Behaviors								
Drinking Alcohol								
→ Lifetime								
drinker								
never								
→ Past Year								
drinkyr								
Drank >5 in Day								
Got Drunk		x	x		?		x	x
Drunk 4 2 more day		x	x		x	x	x	
→ Past Month								
drinkmo								
Drank >5 in Day								
Got Drunk	x	x	x		x	x	x	x
Drunk 4 2 more day					x	x		
Preventive Health Practices								
Number								
Physical Health Care								
Used I.HS 4 Alc/Drug	x							
Confirmed used I.HS								
Used I.HS for Physical								
Trad Healer- Physical								
Outcome Variables								
Physical Health Conditions								
LifePhysProb	x		x	x		x		
YrPhysProb								
Dr_LifePhysProb			x			x		
Self-rated Overall Health Status								
Self-Rated Health								
Psychological Health								
Self-Rated Mental Health								

Table 19: Anxiety Questions Chi-Squared Matrix

Chi-Squared Matrix: Anxiety Questions ~ Group #1	Northern Plains tribe - Female - Age 15-24 yrsnptribe==1 & sexf==1 & agecat1==1	Northern Plains Tribe - Male - Age 15-24 nptribe==1 & sexm==1 & agecat1==1,	Southwest Tribe - Female - Age 15-24 swtribe==1 & sexf==1 & agecat1==1,	Southwest Tribe - Male - Age 15-24 swtribe==1 & sexm==1 & agecat1==1,	Northern Plains Tribe Female Age 25-54 nptribe==1 & sexf==1 & agecat2==1	Northern Plains Tribe Male Age 25-54 nptribe==1 & sexm==1 & agecat2==1,	Southwest Tribe Female Age 25-54 swtribe==1 & sexf==1 & agecat2==1,	Southwest Tribe Male Age 25-54 swtribe==1 & sexm==1 & agecat2==1,
Demographic Variables								
Age		x				x		
Marital status					x			
Married/Cohabit					x			
Education					x		?	?
Boarding School								
Attend Board								
Punish 4 Lang								
Practice Culture								
Relative Attended								x
Income								
Income							x	x
Poverty line					x	x	x	
Mobility								
Yr off Rez							x	
Yrs lived in Community								
Yrs lived in House								
Yrs live in 1 place								
Lived life on rez								
Stability								
# Homes 6-16					x			
# Sch 6-16								x

Chi-Squared Matrix: Anxiety Questions ~ Group #2	Northern Plains tribe - Female - Age 15-24 yrsnptribe==1 & sexf==1 & agecat1==1	Northern Plains Tribe - Male - Age 15-24 nptribe==1 & sexm==1 & agecat1==1,	Southwest Tribe - Female - Age 15-24 swtribe==1 & sexf==1 & agecat1==1,	Southwest Tribe - Male - Age 15-24 swtribe==1 & sexm==1 & agecat1==1,	Northern Plains Tribe Female Age 25-54 nptribe==1 & sexf==1 & agecat2==1	Northern Plains Tribe Male Age 25-54 nptribe==1 & sexm==1 & agecat2==1,	Southwest Tribe Female Age 25-54 swtribe==1 & sexf==1 & agecat2==1,	Southwest Tribe Male Age 25-54 swtribe==1 & sexm==1 & agecat2==1,
Occupation								
Stud/Employed								x
employed						x	x	x
Parents' Education								
Father Education			x					
Mother Education						x		
Relationship with Parents								
Father relationship				x				x
Mother relationship		x				x		
Cultural Characteristics								
Ethnic identity								
Speak Lang				x				
Maintain T & V								
Family T & V						x		
Language Use								
Tribal Lang Ch								
English Childhd								
Military								
Imp Military P					x			
Share War Stry				x				
Be Warrior								
Active Duty						x		
Combat Exp							x	
Religion/Spirituality								
Cultural Spirtual					x			

Chi-Squared Matrix: Anxiety Questions ~ Group #3	Northern Plains tribe - Female - Age 15-24 yrsnptribe==1 & sexf==1 & agecat1==1	Northern Plains Tribe - Male - Age 15-24 nptribe==1 & sexm==1 & agecat1==1,	Southwest Tribe - Female - Age 15-24 swtribe==1 & sexf==1 & agecat1==1,	Southwest Tribe - Male - Age 15-24 swtribe==1 & sexm==1 & agecat1==1,	Northern Plains Tribe Female Age 25-54 nptribe==1 & sexf==1 & agecat2==1	Northern Plains Tribe Male Age 25-54 nptribe==1 & sexm==1 & agecat2==1,	Southwest Tribe Female Age 25-54 swtribe==1 & sexf==1 & agecat2==1,	Southwest Tribe Male Age 25-54 swtribe==1 & sexm==1 & agecat2==1,
Stress/Stressful Events								
#CommProbs	x							x
#LifeEvents						x		
#RecentEvent		x			x	x		
#TramaEvent	x				x	x	x	x
Social Support								
ss_perc	x		x		x	x		
ss_neg	x	x			x	x	x	x
ss_instr		x			x	x	x	x
isolated	x	x			x	x	x	x
Mental Health Care/Counseling								
Attitude - MH Profs								
Pref AIAN Counselor							?	
Pref Gender Coun					x			
Family Dr Help								
Family Dr Comfort								
Att 2 Trad Healer								
Att 2 Pastor/Priest							x	
Att 2 NAC						x		x
Att 2 12-Step				x				
Seek Help 4 MH				x		x		
Seek Help in past YR	x			x	x	?	x	x
Trad Healer- Past Yr							x	x
Help from Trad Heal								
Ever Drug Problem	x	x			x	x		x
# Seen Trad Healer								
Ever Emotion Prob	x		x	x	x	x	x	x

Chi-Squared Matrix: Anxiety Questions ~ Group #4	Northern Plains tribe - Female - Age 15-24 yrsnptribe==1 & sexf==1 & agecat1==1	Northern Plains Tribe - Male - Age 15-24 nptribe==1 & sexm==1 & agecat1==1,	Southwest Tribe - Female - Age 15-24 swtribe==1 & sexf==1 & agecat1==1,	Southwest Tribe - Male - Age 15-24 swtribe==1 & sexm==1 & agecat1==1,	Northern Plains Tribe Female Age 25-54 nptribe==1 & sexf==1 & agecat2==1	Northern Plains Tribe Male Age 25-54 nptribe==1 & sexm==1 & agecat2==1,	Southwest Tribe Female Age 25-54 swtribe==1 & sexf==1 & agecat2==1,	Southwest Tribe Male Age 25-54 swtribe==1 & sexm==1 & agecat2==1,
Health Behaviors								
Ever smoke Cig						x		
Smoke Cig Now		x						
Ever Chew Tob								
Chew Tobacoo Now								
Drinking Alcohol								
→ Lifetime								
drinker	x							
never					x			x
→ Past Year								
drinkyr	x				x			
Drank >5 in Day								
Got Drunk								x
Drunk 4 2 more day						x		x
→ Past Month								
drinkmo				x				
Drank >5 in Day								x
Got Drunk				x	x	x		x
Drunk 4 2 more day					x			
Preventive Health Practices								
Number								
Physical Health Care								
Used I.HS 4 Alc/Drug								x
Confirmed used I.HS								x
Used I.HS for Physical		x						
Trad Healer- Physical								
Outcome Variables								
Physical Health Conditions								
LifePhysProb			x			x		x
YrPhysProb	x		x		x	x		x
Dr_LifePhysProb			x			x		x
Dr_YrPhysProb			x		x	x	x	x
Self-rated Overall Health Status								
Self-Rated Health	x				x	x	x	x
Psychological Health								
Self-Rated Mental Health	x				x	x	x	x

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VITA

Kimberly Rose Huyser attended Window Rock High School in Fort Defiance, Arizona. In 1999, she entered Calvin College in Grand Rapids, Michigan. She received the degree of Bachelor of Arts from Calvin College in May, 2003. In August 2003, she entered The Graduate School at The University of Texas.

Permanent Address: P.O. Box 16875, Phoenix, AZ 85011-6848

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