

Native Americans with Disabilities: A Comparison of Male and Female Eastern Tribal Members

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Abstract: This study identified prevalence of disabilities, employment, and rehabilitation needs of four eastern tribal members. Chi-square tests were conducted to compare females to their male counterparts. Females were more likely to experience arthritis and orthopedic challenges; males to experience substance abuse. No gender difference in employment rate was found.

Keywords: Native Americans, disabilities, employment.

According to the 2000 U.S. Census, about 2.5 million Americans (0.9 percent) of the U.S. population identified themselves as Native Americans, and approximately 4.1 million (1.5 percent) identified as Native Americans in combination with another race. Native Americans have disproportionally higher disability rates compared to other races or ethnic groups. Nearly two decades ago, 22 percent of Native Americans, with 27 percent of Native Americans between the ages of 16 and 64, were estimated to have a disability in 1991-1992 (Bradsher, 1995). The disability rate of Native Americans remained the same several years later according to the 1997 Survey of Income and Program Participation (SIPP) data: a higher percentage (22 percent) of Native Americans was estimated to have a disability in comparison to the general U.S. population (20 percent) (McNeil, 2001). An estimated 12 percent of Native Americans had a developmental or other disability of sufficient severity to require the use of a wheelchair, cane, or crutches, or for which they required assistance in performing activities of daily living or instrumental activities of daily living and to prevent them from working (McNeil, 2001).

Recently the 2008 American Community Survey (ACS) adopted a dynamic definition of disability, in order to better identify people with disabilities and to improve the estimate of the population of persons with disabilities. The definition considers a person's risk of participation limitation when he or she has a functional limitation or impairment (U.S. Census Bureau, 2008). From the 2008 ACS, Native Americans had the highest prevalence of disability (18.8 percent) for working-age people (ages 21 to 64) among all races compared to 14.3 percent among African Americans and 10.2 percent among Whites (Erickson, Lee, & von Schrader, 2009).

Several studies report possible reasons for racial and ethnic minorities collectively experiencing a greater disability burden than do their white counterparts. The high incidence of disabilities among minority groups is not likely due to illnesses being inherently more severe or prevalent in the community, but rather "is fundamentally a measure of exposure to health risks"

(LaVeist, 1996, p. 24), including perhaps limited access to culturally sensitive treatments (U.S. Department of Health and Human Services, 2001). In addition, multiple factors need to be considered, including poverty, socio-demographic and cultural factors, inadequate resources, discrimination, and historical contexts (e.g., devastating population losses through war and disease, appropriation of aboriginal lands by governments, and loss of traditional economies) (Beals, Manson, Whitesell, Spicer, Novins, & Mitchell, 2005).

A socioeconomic disparity also exists among Native Americans with disability. In the 2008 ACS, the employment rate of working-age whites (ages 21 to 64) with disability in the U.S. was 41.1 percent, while employment of Native Americans with disability was only 36.5 percent (Rehabilitation Research and Training Center on Disability Demographics and Statistics, 2010). This indicates a special challenge for Native Americans with disability to find employment. The unemployment rate for all Native Americans at 15 percent, ages 16 and over, was higher compared to a rate for the general population of 6 percent. This is almost three times as high as the unemployment rate for the white population in 2003 (U.S. Bureau of Labor Statistics, 2003). Specifically, the unemployment rate was 22% for all non-gaming tribes and 15% for gaming tribes (Taylor & Kalt, 2005). According to U.S. Census Bureau (2004), the income level for Native Americans was 73 percent of the U.S. average, and the poverty rate (26 percent) was 2.6 times higher than that for whites and more than twice the average for all Americans (approximately 12 percent).

This disparity still exists even though estimates of unemployment rates for Native Americans are not shown separately by the U.S. Bureau of Labor Statistics after 2003 due to small number of survey respondents (Bowler, Ilg, Miller, Robison, & Polivka, 2003). The gap between Native American and White unemployment increased over the recession, and the jobs crisis for Native American may be even worse than the unemployment numbers reflected due to becoming discouraged and ceasing to look for jobs (Austin, 2009).

The gender differences in health conditions have been well discussed among general populations (Bird & Rieker, 2008; Idler, 2003, Yang & Lee, 2009). In 2008, 12.4 percent of females of all ages and 11.7 percent of males of all ages in the U.S. reported a disability (Erickson, Lee, & von Schrader, 2009). Women in general have, on average, more nonfatal chronic conditions (Bird & Rieker, 2008), physical disabilities (Yang & Lee, 2009), functional limitations (Rohlfesen, 2008), and depression and anxiety disorders (Bird & Rieker, 2008; Rohlfesen, 2008; Yang & Lee, 2009), while men have higher odds of problem drinking, substance abuse (Bird & Rieker, 2008; Rohlfesen, 2008), and life-threatening chronic disease (Bird & Rieker, 2008).

Contrary to common belief, Bradsher (1995) reported that there were no significant differences observed between disability rates for Native American men and women and those between the ages of 15 and 64. After more than a decade, there are only a handful of studies reporting the prevalence of disabilities and health conditions among Native American women. Research on Native Americans has been limited due to the small size of this population, its heterogeneity, surveys of organizations serving Native Americans (e.g., tribal representatives, independent living centers), or analyses on administrative data instead of tribal members (National Council on Disability [NCD], 2003). Existing studies suggest that Native Americans,

both men and women, experience a disproportionate burden of various disabilities (Huang et al., 2006; NCD, 2003). There have been several studies on the rehabilitation needs of Native Americans with western tribes and Native Americans as a whole (Schacht, Gahungu, White, LaPlante, & Menz, 2000). Marshall, Johnson, Martin, Saravanabhavan, & Bedford (1992) used a community-based approach and the Participatory Action Research model to identify incidence of disabilities and rehabilitation needs of Native Americans in Denver, Colorado. However, there has been scarce research on the health and disability needs of Native Americans with disabilities in eastern tribes.

To address the issue of this lack of awareness regarding eastern tribes' health and rehabilitation needs, the authors have conducted a series of studies and reported results elsewhere (Ni, Wilkins-Turner, Ellien, Harrington, & Liebert, 2008; Ni, Wilkins-Turner, Liebert, & Ellien, 2008; Ni, Wilkins-Turner, Liebert, Ellien, & Harrington, 2009). Continuing previous efforts, this study further explored the disabilities and employment status among Native American men and women in four eastern tribes. The purpose of this study was to identify the prevalence of disabilities of females from four eastern tribes as compared to their male counterparts. This study also examined functional limitations in daily activities, employment status, and receipt of public services.

The following research questions were addressed:

1. What was the prevalence of major disability among Native American men and women (age 16 and above) from four eastern tribes?
2. What was the prevalence of major disability among working-age (21-64) Native American men and women from four eastern tribes?
3. Was there significant difference between disability rates of Native American men and that of women from eastern tribes?
4. Was there significant difference between Native American men and women from eastern tribes in the proportions of major disabilities?
5. What were the functional limitations due to disabilities and rehabilitation needs?
6. Was there significant difference between Native American men and women from eastern tribes in the proportions of employment?
7. Was there significant difference between Native American men and women from eastern tribes in the proportions of concerns related to finding and keeping jobs?

Method

Participants

A convenience sampling approach was used for this study and participation was voluntary. In the early stages of data collection (2004-2006), random sampling from tribal rolls was possible. Later, during 2007-2008, barriers to the access of tribal rolls arose and research technicians actively recruited tribal members to participate, resulting in a predominantly convenience sampling throughout the study.

30% of all tribal members from four eastern tribes, with and without disabilities, were recruited from tribal rolls. A total of 858 tribal members were invited to participate in a 30-minute face-to-face screening interview with structured questions about health, mental health, disability and employment. Participation in the screening interview was voluntary. All participants received an incentive under \$10 in appreciation for their time. From screening interview, tribal members with disabilities were identified using four primary criteria based on self-report: (a) ages 16 and above, (b) a Native American with at least one disability that limited their daily functions; (c) alcoholism was not the primary disability, and (d) a member of the tribal roll of four eastern tribes.

Instrumentation

An Advisory Council from eastern tribes, with representation from each of the tribes, was formed to promote a culturally sensitive research design and provide expert opinions regarding the content of survey questions in the initial stage. The survey was adapted from a survey used by Marshall and her colleagues (1992), which had an inter-rater reliability of 97.9%. The inter-rater reliability for the instrument used in this study was 98.6%. All of the disability related items consisted of statements that were answered either “Yes” or “No”. For example, one of the questions is, “Do you have a disability or one of the following health conditions? Yes or No.”

Procedure

This study is part of a five-year research project that focuses on the health and service needs of Native Americans with disabilities from four eastern tribes. This study applied the Participatory Action Research model to facilitate collaboration among four eastern tribes in the planning and implementation of community-based research. This collaboration between the research team and the Advisory Council continued throughout the five-year study period. In addition, this culturally appropriate network comprised tribal leaders who advised the research team and referred competent Native American research technicians.

Beginning in 2004, tribal council members selected research technicians from each of the participating tribes, with a goal of interviewing 30% of tribal members over 16 years of age. To ensure consistency of interviewing procedures among the Native American research technicians, a mandatory three-day training was offered prior to collecting survey data. The training consisted of a reading of the needs assessment survey, question by question, answering concerns and modeling in response to the questions. Role-playing and observation during interviews were used as an evaluation tool to ensure that research technicians were adequately trained. Research technicians conducted individual interviews in various locations, including tribal members’ homes, tribal offices, and tribal events.

Between 2004 and 2008, 35 trained tribal research technicians conducted a screening interview to identify tribal members with disabilities. Tribal members having one disability limiting daily function or two disabilities and more were included for the study. The results of that survey were reported elsewhere (Ni, Wilkins-Turner, Ellien, et al., 2008). From that survey, 160 tribal members with disabilities were identified and invited to participate in this presented study and complete a survey on employment and rehabilitation needs. The interview was

approximately 50 minutes in length. Research technicians were paid \$50 for each interview completed, plus providing compensation for travel costs.

Data Analysis

Both descriptive and inferential procedures were used to analyze the data collected. The level of significance, α , for all statistical tests was set at .05, and all statistical analyses were conducted with SPSS. Chi-square tests were conducted to compare the differences between 98 females and their 62 male counterparts in terms of disability rates, employment status, and rehabilitation needs. The following assumptions of chi-square were checked before conducting the tests: independence of observation, normality, and inclusion of non-occurrences.

Results

Participants

Tribal members from four eastern tribes participated in the study. Research technicians using the disability screening survey interviewed 858 tribal members and identified 174 tribal members (20.5 percent) above 16 years of age as having disabilities (see Table 1). Among those, 154 (88.5 percent) participated in the current study with 59 (38.3 percent) being males and 95 (61.7 percent) females. The average age was 49 years; with males averaging 47 and females 50, the age range was 17 to 86. Almost all of the participants lived in small towns, suburbs, or cities in the northeast states.

Table 1. Prevalence of Disability by Gender from Screening Survey

| | <i>Total in screening survey</i> | | <i>Tribal members with disabilities</i> | | <i>Disability rate</i> |
|-------------------------|----------------------------------|---------|---|---------|------------------------|
| | number | percent | number | percent | percent |
| All (age 16 and above) | 858 | 100 | 176 | 100 | 20.5 |
| Male | 396 | 46 | 62 | 39 | 15.7 |
| Female | 462 | 54 | 99 | 61 | 21.4 |
| Working-age* | 785 | 100 | 128 | 100 | 16.3 |
| Male | 372 | 47 | 51 | 40 | 13.7 |
| Female | 413 | 53 | 77 | 60 | 18.6 |

* age 21-64

Prevalence of Disability

The prevalence of disability for all participants above 16 years of age was 20.5 percent, and for working-age participants (ages 21 to 64) 16.3 percent. Disability rates between all females (21.4%) and males (15.7%) were significantly different [$X^2(1, N=858) = 4.66, p=.03$], and between working-age females and males were not significantly different [$X^2(1, N=785) = 3.49, p=.06$]. As

shown in Table 2, the most prevalent physical disabilities for males and females include hypertension, eye conditions, arthritis, obesity, diabetes, orthopedic disorders, and heart problems.

Over a third (36%) had one or more mental health conditions, with anxiety (25.5%) and chronic depression (18.8%) the most prevalent. Of the 54 with mental health conditions, 16% had one condition, 10% had two, and 10% had three to six mental health conditions. Substance abuse, including alcohol, non-prescription drugs and sniffing glue, was reported as a problem for 21 (13.9%); 13 (62%) of these had co-occurring mental conditions (four had one co-occurring mental condition, four had two to three co-occurring disorders, and five had at least four co-occurring mental conditions).

Females had significantly more arthritis [$X^2(1, N=153) = 6.36, p=.01$] and orthopedic disorder [$X^2(1, N=150) = 6.37, p=.01$], whereas males had significantly higher substance abuse [$X^2(1, N=150) = 4.1, p=.04$].

Table 2. Prevalence and Comparison of Major Physical and Mental Health Conditions by Gender

| | <i>All (n=154)</i> | | <i>Male (n=59)</i> | | <i>Female (n=95)</i> | | <i>Comparisons</i> | |
|---------------------------------|--------------------|---------|--------------------|---------|----------------------|---------|--------------------|---------|
| | number | percent | number | percent | number | percent | Pearson Chi-Square | P value |
| Physical conditions | | | | | | | | |
| Hypertension | 74 | 48.1 | 28 | 47.5 | 46 | 46.4 | 0.002 | 0.96 |
| Eye conditions | 64 | 42.4 | 21 | 37.5 | 43 | 45.3 | 0.74 | 0.39 |
| Arthritis | 58 | 37.7 | 15 | 25.4 | 43 | 45.3 | 6.36 | 0.01* |
| Obesity | 53 | 35.1 | 16 | 28.6 | 37 | 38.9 | 1.47 | 0.27 |
| Diabetes | 43 | 28 | 14 | 23.7 | 29 | 31 | 0.99 | 0.32 |
| Orthopedic disorders | 39 | 25.8 | 8 | 14.3 | 31 | 32.6 | 6.37 | 0.01* |
| Heart problems | 37 | 24 | 19 | 32.2 | 18 | 18.9 | 3.37 | 0.07 |
| Asthma | 34 | 22.1 | 9 | 15.3 | 25 | 26.3 | 2.7 | 0.1 |
| Mental health conditions | | | | | | | | |
| Anxiety | 39 | 25.5 | 13 | 22.4 | 26 | 27.4 | 0.52 | 0.47 |
| Depression, chronic | 29 | 18.8 | 11 | 18.6 | 18 | 18.9 | 0.006 | 0.94 |
| Substance abuse | 21 | 13.9 | 12 | 21.4 | 9 | 9.5 | 4.1 | 0.04* |
| Bipolar disorder | 11 | 7.1 | 4 | 6.8 | 7 | 7.4 | 0.02 | 0.88 |
| Personality | 7 | 4.6 | 2 | 3.6 | 5 | 5.3 | 0.24 | 0.62 |

| | | | | | | | | | |
|-----------------|---|-----|---|-----|---|-----|------|------|--|
| disorder | | | | | | | | | |
| Eating disorder | 7 | 4.5 | 1 | 1.7 | 6 | 6.3 | 1.83 | 0.18 | |
| Schizophrenia | 5 | 3.3 | 1 | 1.8 | 4 | 4.2 | 0.66 | 0.42 | |

Note. * p<.05

Self-Reported Functional Limitations and Needs

Disabilities limited all participants in doing the following: working on a job (48%), walking (41%), seeing (39%), and lifting (38%), with no statistical difference between males and females. Participants reported the following needs related to their disability:

- 44% (69) used medications with 12% (19) needing new or improved medications;
- 41% (63) used glasses and 24% (38) needed new or improved glasses;
- 10% (16) used a cane or a crutch and two (2) needed new cane/crutches;
- 5% (7) used a wheelchair and 1% (2) needed a new wheelchair.

Employment

Of all participants, only 89 (56 percent) were working for pay; among those, 59 (68 percent) were employed full-time. There was no statistical difference of employment rate between males and females [$X^2(1, N=149) = 0.12, p=.73$]. The number one reason for having difficulty finding or keeping a job was disability (25 percent), and home responsibilities were a more significant reason for having difficulty finding or keeping a job for females than males [$X^2(1, N=134) = 6.72, p=.01$]. Of those not working, 31 (43 percent) said they wanted a job, and of these, 20 (65 percent) had been looking for work (i.e. Internet, newspaper, temporary job service). However, only 3 percent received services from the state vocational rehabilitation agency to find a job, and over 70 percent did not know (at the time the survey was conducted) whether state VR would respond to their needs.

Discussion

This study identified the prevalence of disability of Native Americans in four eastern tribes; 176 (20.5%) out of 858 tribal members were identified as having disabilities. Disability rates between females (21.4%) and males (15.7%) were significantly different. Females had significantly more arthritis and orthopedic disorder; whereas males had significantly higher substance abuse. Of all participants, only 56% were working for wages. There was no difference of employment rate between males and females.

Prevalence of Disability

The prevalence of disability for all participants above 16 years of age was 20.5 percent and for working-age participants was 16.3 percent. These rates were lower than that of Native Americans between the age of 16 and 64 (27 percent) from the 2000 U.S. Census data (Waldrop & Stern, 2003) and were also lower than that of working-age Native Americans (18.8 percent) from the 2008 ACS (Erickson, Lee, & von Schrader, 2009).

One possible explanation for these lower disability rates is perhaps economic status which allowed access to good health care, including preventive health care, perhaps reducing the number of certain types of disabilities and health conditions. One of the four tribes had a high level of economic development and successful tribal businesses (e.g., hotels, casinos), which contributed to a higher household median income (approximately \$62,500) among participants than overall Native American households in 2003 (\$44,347).

One challenge of comparing disability rates is that the definition of disability is quite complex and variable; often resulting in inconsistent definitions of disability among different federal and state laws, public programs, insurance plans, and organizations (NCD, 2008). Statistics vary depending on the source of data, the definition of disability, and the type and severity of the disabilities included. In this study, the most prevalent physical disabilities for males and females include hypertension, eye conditions, arthritis, obesity, diabetes, orthopedic disorders, and heart problems. These results are somewhat different from an earlier study, in that the highest prevalent disabilities among continental Native Americans were diabetes (29 percent), emotional disabilities (22 percent), and learning disabilities (11 percent), while emotional disabilities (31.3 percent), learning disabilities (17 percent), and deafness or hardness of hearing (17 percent) were the most frequently reported disabilities among tribes in Alaska (Fowler, Seekings, Locust, Dwyer, & Duffy, 1995). Clay (1992) reported that the most frequently observed disabilities among Native Americans using independent living centers on reservations were spinal cord injury, diabetes, blindness, mobility disability, traumatic brain injury, deafness or/and hardness of hearing, orthopedic conditions, and arthritic conditions. Rates of each of these disabilities were not provided.

Another study suggested that of tribal members who received VR services from Native American VR programs in 2001, over 28 percent had a substance abuse problem, 22 percent had an orthopedic disability, 17 percent had a mental or emotional disability, and 15 percent had a learning disability (Hopstock, Baker, Kelley, & Stephenson, 2002). In the 2008 American Community Survey, the highest prevalence rate for all working age people (ages 21 to 64) was for ambulatory disability (5.4 percent), followed by cognitive disability (4.1 percent), and independent living (3.6 percent) (Erickson, Lee, & von Schrader, 2009).

Compared to these studies documenting prevalence of disability among Native Americans in various periods of time, it is likely that there was a different epidemiological trend in the four eastern tribes. For example, hypertension was not reported in those studies, but it is not uncommon in today's high stress environment for many individuals. However, the prevalence of hypertension in eastern tribes (48 percent) appeared to be higher than that of all Americans (31 percent) between age 45 and 54 (Centers for Disease Control and Prevention, 2005). In addition, individuals with mental illness are more likely to be diagnosed today than fifteen years ago. According to another study (Huang et al., 2006), Native Americans as a whole had significantly greater prevalence rates of alcohol use disorders, drug use disorders, mood disorders (i.e., depression, manic-depression disorder), anxiety disorders, and personality disorders compared to the general population.

Substance abuse might have been under-reported as it was lower (13 percent) in this population compared to the western tribes (24 percent) (Marshall et al., 1992) and others (Huang et

al., 2006; Hopstock et al., 2002). Using the 1997 Rehabilitation Services Administration (RSA) 911 data, alcohol abuse or dependence was the most common disability among Native Americans who sought vocational rehabilitation services, followed by learning disabilities (9 percent) (Schacht, Gahungu, White, LaPlante, & Menz, 2000). Approximately 11 percent of Native Americans receiving VR services had a major diagnosis of alcohol abuse compared with only 4 percent of White, nearly 6 percent of Black, and less than 2 percent of Asian clients (Schacht et al., 2000).

Gender Differences in Health

In this study, females above 16 years of age had significantly higher disability rates (21.4 percent) than males (15.7 percent) [$X^2(1, N=858) = 4.66, p=.03$]. Females had significantly more arthritis [$X^2(1, N=153) = 6.36, p=.01$] and orthopedic disorder [$X^2(1, N=150) = 6.37, p=.01$], whereas males had significantly higher substance abuse [$X^2(1, N=150) = 4.1, p=.04$]. This gender difference in physical and mental health can be influenced by a combination of social and biological factors, both directly and indirectly (Bird & Rieker, 2008).

The difference in health perception between men and women may have also contributed to the gender difference in health discrepancies, as the participants self-reported their disabilities. In a study of over 22,000 men and women in Britain, women were significantly less likely to rate their health as excellent regardless of social class (McFadden, Luben, Bingham, Wareham, Kinmonth, & Khaw, 2009). However, self-rated health is not as uniform as once thought. While some researchers reported that women on average assess their health to be worse than men (McFadden et al., 2009; Yang & Lee, 2009), others reported that females have the same or better self-rated health compared to males regardless of more physical limitations, acute and non-fatal chronic health conditions, and depressive symptoms (Rohlfen, 2008). Even the same disease, depression, can be defined differently and carry varying levels of stigma in males and females (Johansson, Bengs, Danielsson, Lehti, & Hammarstro, 2009).

Difference in health-seeking behavior between men and women may also shape health discrepancies. One study reported that women are more likely to seek treatment earlier than men for similar symptoms (Gochfeld, 2009); while others argued that the ability to choose health among competing priorities is shaped by contextual factors (e.g., work and family obligations, communities, policy in a broad network of influence), rather than gender directly (Bird & Rieker, 2008). Because contextual factors differ across individuals, and often differ more generally across men and women, not everyone is similarly able to choose health (Bird & Rieker, 2008).

Employment and Rehabilitation Needs

Despite only 56 percent of tribal members with disabilities working for wages, this sample had high household income. Financial support from family members was a common resource among them. There was no statistical difference of employment rate between males and females. However, male and female tribal members had different reasons for experiencing difficulty finding or keeping a job; disability was a common reason among men and home responsibilities was common among women.

Of those not working, 43 percent wanted a job but only 3 percent had utilized vocational rehabilitation (VR) agencies to find a job. VR agencies can provide services to tribal members with disabilities to achieve gainful employment. However, a majority did not know whether state VR would respond to their needs, which indicated a lack of knowledge and use of public health or social agencies. Participants minimally involved with social service agencies could relate to the stigma felt by tribal members with disabilities or a lack of trust of state agencies, and it is also likely due to either ineffective, or a lack of, cultural competence of service providers. Depending on tribal beliefs and values surrounding disability related terms, tribal members asked to self-report their disabilities may be reluctant to participate in programs that promote independent living objectives, vocational rehabilitation, or special education (NCD, 2003).

The fear of stigma often deters individuals from seeking help, and also remaining in service or treatment (U.S. Department of Health and Human Services, 2001). Moreover, tribal values are likely to affect the adequacy and comprehensiveness of many programs dealing with access to and services for Native Americans with disabilities as well as tribal members' willingness to participate in initiatives to reduce barriers (NCD, 2003). Consequently, effective strategies including education or health promotion programs are needed to reach out to Native Americans with disabilities and expand their contact with health providers and other services.

Capacity Building

Native American programs that fail to incorporate cultural beliefs will have difficulty in obtaining community support (NCD, 2003). With this in mind, this study incorporated the capacity building component to enhance the involvement of tribal members throughout the research process. This participatory action research method, which includes Native Americans in the design, data collection, and implementation process, has been recommended elsewhere as a means to ensure that research is culturally sensitive and findings are both accurate and relevant (Davis & Reid, 1999; NCD, 2003). One outcome of this study related to the capacity building component was an awareness of tribal members with disabilities that did not exist prior to this research project. Ni, Wilkins-Turner, Ellien, Harrington, & Liebert (2009), found that the research technicians hired for this study were the most valuable resources to inform participants about available services including a tribal Vocational Rehabilitation Program. The support network among research technicians, service providers, and tribal members was expanded via use of participatory action research, which may lead to improved VR outcomes. VR knowledge translation was evident (Ni, Wilkins-Turner, Ellien, et al., 2009).

The results of this study suggest several implications. First, to address the accessibility of social services with culturally relevant outreach to tribal communities, researchers should consider using Participatory Action Model as it is a highly effective approach with Native Americans. Second, health education programs within a community may be developed to promote health care, especially regarding highly prevalent disabilities. These education and information programs for the tribal community may emphasize health and wellness. They may also provide specific information about how to cope with mental illness and other disabilities in order to alleviate functional limitations related to work and independent living. To increase culturally relevant services, there is a need for making efforts to train, hire, and retain Native Americans in health related fields. Third, to make social services more accessible with culturally

relevant outreach to tribal communities, service providers may utilize community-based resources or direct contact by tribal members, councils and elders to establish a culturally appropriate network. This community-based study is an example of providing a unique opportunity for tribal members to learn firsthand about careers in health and disability research and to become resource persons for their respective tribes.

Limitations of this study include the use of convenience sampling, over-representation of women, and self-report. In addition, Native Americans' cultures, languages, traditions, and beliefs concerning health and disability are distinct across tribes (NCD, 2003). These differences among four tribes were not discussed due to the scope of this study. Cause and effect was not examined in this study. Due to heterogeneity among Native American tribes, one should not make generalizations to Native Americans as a whole or to those in other geographic locations. Thus, one should be cautious in interpreting the data. Future research which continues to explore the disability, employment and health experience of Native Americans of the eastern tribes is warranted due to the continued marginalization of this culture within American society.

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