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Florence G. Duran
University of Nebraska Medical Center

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Florence Duran

University of Nebraska Medical Center

College of Public Health

Abstract

Background: Great Plains American Indians/Alaska Natives (AI/ANs) experience higher mortality rates than Non-Hispanic Whites from the same region. The National Behavioral Risk Factors Surveillance System (BRFSS) survey can have limitations of the estimates the health risks behaviors and services from one Tribal community to another. **Goals and Objectives:** The goal of this project is to address the lack of Tribal specific data among AI/ANs in the Great Plains region (ND, SD, NE, IA) by using Great Plains Tribal BRFSS data that captured information for three tribes in the Great Plains region. Tribal specific data will allow tribes to access, address, and possibly implement evidence-based health promotion and chronic disease prevention practices and health policies. The objectives of this project were to: 1) conduct an analysis of the prevalence of different behavioral risk factor indicators in two Great Plains Tribal communities and their respective State Non-Hispanic White population; 2) identify a framework and describe the steps for disseminating results to the two Tribal communities, including tribal specific reports with the BRFSS data; and 3) conduct a literature review to identify evidence-based interventions to address alcohol-related risk factors in AI/ANs residing in the Great Plains region. **Methods:** We used the Great Plains BRFSS data that were collected in 2013. We conducted exploratory data analysis to note any large differences between the Tribal results and their respective State's results. Existing dissemination strategies employed by the Great Plains Tribal Chairmen's Health Board were reviewed and a literature review was conducted to identify evidence-based interventions to address alcohol related issues. **Results:** The Great Plains American Indian BRFSS Project appears to show health disparities between

Tribal populations and Non-Hispanic Whites in several behavior risk factors including health care access, cancer screenings, alcohol misuse, smoking, obesity, and diabetes. A community based participatory research approach framework was identified while observing Tribal Sovereignty. The literature review shows two effective evidence-based interventions.

Discussions: Data from this project will allow the two Tribes to identify health risk behavior priority areas and address gaps in health level risk behavior knowledge. In addition, this report will provide evidence-based interventions that Tribal Leadership and Tribal Health Departments can implement in their respective communities, specifically related to alcohol use.

Introduction

The Placement Site

The placement site for this project was the Great Plains Tribal Chairmen's Health Board (GPTCHB), which was established in 1986 by the previous Chief Executive Officer, Ms. Carole Anne Hart. Ms. Hart's vision was that GPTCHB would become the central site in which partnerships with and between Tribes, Tribal organizations and organizations that serve Tribes could come together to work on the health disparities of the Tribes in the four-state region of South Dakota, North Dakota, Nebraska and Iowa. Ms. Hart has since walked on to the spirit world, but her vision is still alive today. GPTCHB works to reduce public health disparities and improve the health and wellness of the American Indian people who are members of the 18 Great Plains tribal nations and communities. GPTCHB is in Rapid City, SD and has 50+ staff members among five departments as well as staff in several of the tribal communities.

Currently, GPTCHB serves as a liaison between the Great Plains Tribes and the various Health and Human Services divisions including the Great Plains Area Indian Health Service (GPIHS). The Indian Health Service (IHS) is an agency within the Department of Health and Human Services and is responsible for providing a health service delivery system for approximately 2.2 million American Indians and Alaska Natives who belong to the 573 federally recognized tribes in the United States (IHS, 2017). The GPIHS provides health services to approximately 130,000 Indian people who reside within nineteen service units.

The department that houses the Tribal BRFSS project is the Great Plains Tribal Epidemiology Center (GPTEC). GPTEC was founded in 2003 as a core component of GPTCHB and is funded by the Indian Health Service's Division of Epidemiology of Disease Prevention. GPTEC is charged

with providing Great Plains Area Tribes with data collection, evaluation, identifying health priorities, making recommendations on health service needs, providing disease surveillance and providing epidemiologic technical assistance. GPTEC's core activities are generating and supporting the use of tribal public health data, supporting surveillance activities for monitoring the health status of American Indians/Alaska Natives in the Great Plains and responding to outbreaks and emergent tribal health priorities. The GPIHS holds annual meetings to ensure Tribes have input into the IHS budget formulation process to develop an area wide budget with recommendations.

The GPIHS Area FY 2019 budget formulation consolation report shows Alcohol and Substance Abuse as the second highest priority with Hospital and Health Clinic being first (IHS, 2018). The tribe's contract with outside agencies for nearly all alcohol and substance abuse programs in the Great Plains area. There is need for funding for tribes to develop their own alcohol programs and substance abuse treatment facilities. Therefore, alcohol misuse was selected as focus area for this paper.

The Indian Health Service

Federally recognized Tribes occupy a unique legal and political status within the United States. The federal trust responsibility and Tribal sovereignty make up the most important foundations for this status. The result of numerous treaties, Supreme Court cases, legislative acts, and executive orders (Warne & Frizzell, 2014), the federal trust responsibility is a legal obligation under which the U.S. "has charged itself with moral obligations of the highest responsibility and trust" (Bureau of Indian Affairs, n.d.) toward Indian Tribes. It comprises the

responsibility of the federal government to provide health care and other benefits to enrolled members of federally recognized Tribes across Indian Country. Various federal agencies have been set up to fulfill this duty, including the Indian Health Service (IHS), which was created in 1955 Legislation.

Lack of Tribal Specific Data and Health Disparities in American Indians and Alaska Natives

According to IHS, American Indian people have long experienced a lower health status when compared with other Americans. The IHS attributes lower life expectancy and the disproportionate disease burden due to multiple factors: inadequate education, disproportionate poverty, discrimination in the delivery of health services, and cultural differences; and underscores that “these are broad quality of life issues rooted in economic adversity and poor social conditions (IHS, 2017).” Across the US, values for measures of length and quality of life for Native American, Black, and Hispanic residents are regularly worse than for Whites and Asians. For example, even in the healthiest counties in the US, Black and American Indian premature death rates are about 1.4 times higher than White rates.

The American Indian and Alaska Native (AI/AN) Population 2010 Census brief reflects Behavioral Risk Factor Survey Surveillance (BRFSS) health data disparities in health behaviors between AI/ANs and other groups (Office of Minority Health, 2012). However, due to the limited percentage of AI/ANs in the general population, there is only limited health behavior data for AI/AN, especially at individual Tribal levels. The goal of this project was to address the lack of Tribal specific data among AI/AN in the Great Plains region. The limited Tribal specific behavior health data for AI/AN in the Great Plains, do not exist in a form that is user-friendly to non-research personnel. To address the gap, this project used existing BRFSS data from two

tribes in the Great Plains to develop tribal reports that are written in plain language and can be used as a foundation for tribal decision-making regarding the implementation of evidence-based health promotion/chronic disease prevention practices and health policies. The Tribal specific BRFSS report can assist Tribes, Indian Health Services, and GPTCHB/GPTEC to develop and guide their public health programs and policies and in identifying community health status priorities.

According to Dr. Corey Smith, PhD, CPDIMS, Director of Science and Applied Informatics, Great Plains Tribal Chairmen's Health Board; "As a national survey, the BRFSS was designed to collect surveillance data on self-reported preventive health practices and risk behaviors. The chief benefit, and reason for, the implementation of a tribe-specific BRFSS here in the Great Plains is that it addresses the limitations of statewide estimates of disease risk among American Indians. Statewide estimates either may or may not be representative of, or capture the variation across, Tribal communities. Also, the methods we used for survey recruitment, data collection, and reporting at the local level were designed to yield a more accurate interpretation and assessment of the health risks of a community. There exists another advantage to collecting data for a tribe-specific BRFSS: The data can be used to estimate the level of disparity and need for preventive health services, such as health education and programming, within a Tribal community. ", (C. Smith, personal communication, April 18, 2018).

A previous report "The Surveillance for Health Behaviors of American Indians and Alaska Natives, Findings from the Behavioral Risk Factor Surveillance System, 1997-2000" summarized findings for health-statutes indicators, health-risk behaviors, and HIV testing among AI/ANs in five regions of the United States, to include 36 states that are covered by the

IHS administrative areas with a total of 437,991 respondents (Denny et al., 2003). Using the BRFSS core questions including obesity, smoking, diabetes awareness, Papanicolaou (PAP) test, general health status, and perceived risk of HIV infection, found that health behaviors varied regionally for AI/AN and by sex. Cigarette smoking was highest in Great Plains AI/AN (44.1%), compared to Southwest AI/AN at 21.2%. Great Plains AI/ANs also reported the highest percent (11.7%) of ever having been told by a health professional that they had diabetes (Denny et al., 2003). Another report “Assessing Health Status, Behavioral Risks and Health Disparities in American Indians Living on the Northern Plains of the U.S.” showed AI/ANs have a significantly greater prevalence of diabetes, coronary heart disease, smoking, obesity, and heavy alcohol use than in other regions (Holm et al., 2010).

AI/AN populations suffer from some of the worst health disparities in the United States (Espey et al., 2014). The AI/AN population has a 50% higher mortality rate compared to the Non-Hispanic White (NHW) population (Bauer & Plescia, 2014). They also have higher rates of other health disparities including, but not limited to: infant mortality, self-harm/suicide (Herne, Bartholomew & Weahkee, 2014; Murphy et al., 2014), diabetes (Cho et al, 2014), and heart disease (Veazie et al., 2014). These avoidable health disparities are exacerbated further in AI/AN communities by rural isolation, higher rates of poverty, food insecurity, and general lack of access to appropriate health care (Batliner, 2016). Adding to the issue of poor health outcomes, AI/ANs are also less likely to participate in and have access to preventive services such as cervical pap smears, mammograms, and cholesterol screenings (Holm et al., 2010). In addition, AI/ANs have a much higher prevalence of many health-risk behaviors than found in the general public, to include mental health and suicide, obesity, liver disease and hepatitis.

Some leading causes of death among AI/ANs are heart disease, cancer and diabetes. In 2012, tuberculosis rate for AI/ANs was 6.3, compared to 0.8 for the White population (Office of Minority Health, 2012). Continued surveillances can provide improvement of health care access, preventive screenings and health promotion that can lead to better health outcomes for AI/ANs.

Finally, the “Cancer-Related Disparities and Opportunities for Intervention in Northern Plains American Indian Communities” demonstrates there were no statistically significant improvements for Great Plains AI/ANs for behaviors associated with cancer risk or cancer screening use between AI/AN and NHW during 2003-2006. There was evidence of increased obesity rates and the prevalence of binge drinking, obesity, and smoking was higher in Great Plains AI/ANs than in Non-Hispanic Whites (NHWs), (Watanabe-Galloway, et al., 2011).

Across the US, values for measures of length and quality of life for Native American, Black, and Hispanic residents are regularly worse than for Whites and Asians. For example, even in the healthiest counties in the US, Black and American Indian premature death rates are about 1.4 times higher than White rates. It is important to note the disparities AI/ANs face from receiving quality health care. These issues can be attributed to, but not inclusive of geographic isolation, cultural barriers and low income. The BRFSS can assist tribes, IHS, and other tribal organizations to develop and guide their public health programs and policies (Denny et al., 2003).

Historical Trauma as a Source of Health Disparities in AI/AN

Historical trauma is considered an influential social determinant of health in Indian Country. Conceptualized as a “collective complex trauma inflicted on a group of people who have a specific group identity or affiliation” (Warne et al., 2015), historical trauma represents the legacy of repeated social injustices Tribal communities have suffered over multiple generations. The historical trauma theory is described as massive cumulative trauma across generations from historical losses such as land, population, and culture. Because of the loss of people, land, and culture, a systematic transmission of trauma to subsequent generations occurred that has resulted in historical loss symptoms for many Native American individuals (Brave Heart et al., 2011; Whitbeck et al., 2004).

Specifically, the traumatic events suffered during previous generations creates a pathway that results in the current generation being at an increased risk of experiencing mental and physical distress that leaves them unable to gain strength from their indigenous culture or utilize their natural familial and tribal support system (Big Foot & Braden, 2007). The theory implicates that AI/ANs are at great risk of developing physical and emotional concerns related to these traumas. This can equate to lack of access to healthcare and healthcare services, thus there is a need to highlight the behavioral health risk characteristics of American Indian adults in North Dakota and South Dakota to support efforts to develop and implement programs and services to improve the health of the respective population.

Alcohol Misuse Related Health Disparities in AI/AN

American Indians do have a higher prevalence of alcohol use disorders than other races, with 11.7% of all American Indian adult deaths being alcohol related (HHS, 2013). This can be

tracked to historical trauma and other sociocultural factors (HHS, 2013). American Indian adults also have some of the highest alcohol abstinence rates compared to the overall US population (HHS, 2013). Despite this, many American Indian people are more likely to concurrently use alcohol and illicit drugs and are less likely to participate and remain in outpatient treatment for alcohol and other drug use compared to the general US population. There is limited knowledge about effective interventions targeting co-occurring alcohol and other drug use among all adults, and particularity among American Indian adults, despite the association between lack of accessible treatment and related health inequities (Gone et al, 2012).

There are numerous stereotypes regarding American Indians and alcohol use and abuse and that drinking patterns and problems are uniquely Indian. However, epidemiological statistics show higher rates of alcohol abuse are related to many of the same factors that influence drinking among other groups that include age, geography, and social norms. Combinations of these influences may show American Indians at a higher rate of abuse, when in fact they are not (May, J., 1975).

According to Substance Abuse and Mental Health Services Administration (SAMHSA), South Dakota, North Dakota, Nebraska, and Iowa had the highest rates of underage (aged 12 to 20) binge alcohol use (29.5%) and binge alcohol use among persons 18 to 25 years (58%) (SAMHSA, 2017). These states had the highest percentage of persons with dependence on or abuse of alcohol and needing treatment services. The age-adjusted alcohol-related death rate for the IHS service area population in 2005-2007 was 44.7 per 100,000 population. The AI/AN alcohol-related death rate is 6.5 times the U.S. all races rate of 6.9 for 2006. The Great Plains regional rate of 77.0 is 11.2 times higher than the U.S. all races rate and 4.5 times the lowest of

the Nation IHS regional rate. The IHS Nashville region has the lowest alcohol-related death rate of 17.0 (IHS, 2012). South Dakota and North Dakota have the third and fourth largest percentage of AI/AN treatment admissions with 39% of admissions being for alcohol alone (SAMHSA, 2017).

The Waponahki Tribal Health Assessment and Dissemination

Starting in 2009, the University of Nebraska Medical Center (UNMC), the Waponahki Tribes of Maine and their respective Tribal Health Departments worked together using a community-based participatory research approach to conduct a modified BRFFS called the Waponahki Tribal Health Assessment (P. Johansson et al. 2017). The assessment was tribally driven with a support from Tribal leadership to include tribal data ownership. This provided incentive for the Tribal citizens to participate. Tribal leadership was instrumental in support and endorsement that in turned increased participation.

The results from the assessments were compiled into community profiles that were disseminated in Tribal communities and with Tribal leadership. Tribal leaders from all four tribes identified priorities that they tasked Tribal health departments with addressing. To address these priorities a Tribal public health district was formed, and the district developed a health improvement plan that includes prevention, education, and health promotion. The Great Plains BRFFS contains many similarities to the Waponahki project in that there were meetings held with Tribes and Tribal Health Departments and the data is owned by the respective Tribes, which provided incentive for the Tribal citizens to participate.

Behavioral Risk Factor Surveillance System

Every year the Center for Disease Control and Prevention (CDC) works with States to conduct a Behavioral Risk Factor Surveillance System (BRFSS) survey. The BRFSS collects state health related risk behaviors, chronic health conditions, and use of preventive services. Interviews are conducted by contacting more than 400,000 adults, this allows public health organizations the opportunity to target and build health promotion activities (CDC - BRFSS, 2018).

There are three components to the BRFSS survey: The core questions that consist of fixed core questions, the rotating core questions and the emerging core questions. The fixed core questions consist of demographic characteristics and current health behaviors and are a fixed set of questions. There are also the rotating core questions consisting of two sets of questions that are asked in alternating years. The questions not asked in the alternating year can be used as optional modules. The emerging core is a set of up to five questions that are added to the fixed and rotating core questions. Emerging core questions typically focus on “late breaking” issues. These questions are part of the core for one year and are evaluated during, or soon after the year concludes to determine their potential value in future surveys.

All state health departments must administer the core questions (CDC - BRFSS, 2018). These state-specific data are compiled and analyzed on an annual basis and are used for program planning and evaluation. Data on topics such as asthma, cancer, diabetes, heart disease, tobacco use, nutrition and physical activity, and access to health care provide an overview of the health status and emerging trends for each state. Trends in health outcomes and health factors can be monitored to evaluate past progress and set goals for the future goals. Measuring trends in population health outcomes enables communities to evaluate the

differential impact of changes in health determinants and offers communities the ability to see improvement (Remington et al., 2013). Targeting and building health promotion activities can allow Tribes to monitor trends and measure progress towards their key performance measures, create general public awareness and to provide resources to address any health disparities.

The Great Plains Tribal BRFSS Project

The Great Plains Tribal BRFSS project was administered to two tribes; one Tribe in North Dakota (North Dakota Tribe) and one Tribe in South Dakota (South Dakota Tribe) in 2013. The initial planning phase included many meetings with administrators, clinic and health education staff. The survey protocol and materials were developed during this phase. Next, interviewers completed the human subjects credentialing and survey software trainings. The final phase included participant recruitment and interviews. Interviews were administered and collected by trained local interviewers. Data were collected, and preliminary data shell tables were developed. The administered Tribal questionnaires consisted of the core and optional module questions that covered a range of topics. It is important to note that multiple meetings were held with Tribal Leadership, Tribal Health Departments, GPTCHB, State Health Departments to discuss priority areas of interest. Ultimately, the deciding authority rests with Tribal Leadership. The questionnaire included 28 topic areas (Appendix Figure 1).

Objectives

The purpose of the project is to address gaps in knowledge about risks for two Tribal communities, prepare an analysis of the Tribal BRFSS questions, and provide interpretation of and recommendations on alcohol abuse and binge drinking data. The recommendations will

assist the respective tribes and GPTEC with the development and implementation of focused health interventions that most fit the needs of the tribe and its population's needs. The objectives of this study are to:

1. Conduct an analysis of the prevalence of different behavioral risk factor indicators in two Great Plains Tribal communities and their respective State Non-Hispanic White population, using Great Plains Tribal BRFSS data. Focusing on risk factors related to alcohol use, an Indian Health Service (funding) priority in the Great Plains region.
2. Identify a framework and describe the steps for disseminating results to the two Tribal communities, including tribal specific reports with the BRFSS data.
3. Conduct a literature review to identify evidence-based interventions to address alcohol-related risk factors in AI/ANs residing in the Great Plains region.

Methods

Incorporating principles of community-based participatory research (CBPR), can be found to be an effective approach in working with Native communities to reduce health disparities, by researchers and community partners working together, while recognizing tribal sovereignty (Verney, 2016). A CBPR approach was used in collecting and disseminating data in a manner recognizing Tribal sovereignty, in the Waponahki Tribal Health Assessment (P. Johansson et al. 2017).

Objective 1

The Great Plains BRFSS was a cross-sectional in-person survey where data collection was done by trained interviewers using computer-assisted interviewing (CAPI). CAPI refers to survey data collection by an in-person interviewer (i.e. face-to-face interviewing) who uses a

computer to administer the questionnaire to the respondent and captures the answers onto the computer. CAPI is considered a more comprehensive collection method compared to paper collection methods as interviewers are able to enter data directly into a computer. Rather than having to decipher routing instructions during an interview, the computer program takes interviewers automatically to the next appropriate question. This can decrease skip pattern errors and other tracking errors (Sainsbury, Ditch, & Hutton, 1993).

One of the objectives of the project is to collect data in a way that will give a good estimate of the prevalence of health behaviors and health conditions. To get a good estimate, it is necessary to have a large enough sample size to represent the adult population of the participating tribe. In the case of small tribes (e.g., 250 members or less), it was recommended that all adult members to be interviewed, this type of survey is called a census survey. The eligibility criteria were: 1) Adult (18 years and older) and 2) a member of the participating tribes.

Convenience sampling (also known as availability sampling) is a specific type of non-probability sampling method that relies on data collection from population members who are conveniently available to participate in study. For these two respective populations, it means that every adult in the tribe has a chance of being chosen to participate in the survey. "Adult" can mean aged 18 years or older, or aged 19 years or older, depending on the tribe. For tribes, a sampling frame can be found in tribal enrollment list or a similar list. Informed consent was obtained from all participants for both tribes. The informed consent form communicates about the purpose, benefits, procedures, confidentiality, risk and benefits and rights of the participants. The informed consent form was signed by every participant before they began

the questionnaire. The final sample sizes were 255 for the North Dakota Tribe and 112 for the South Dakota Tribe.

The data cleaning and initial analysis was previously completed by the University of Nebraska Medical Center, College of Public Health, Epidemiology Center. The student was charged with re-analyzing the data, developing charts, and providing recommendations. Utilizing excel, the student took the previous tables that were developed and created bar charts to include number of participants, percentage of participants, national recommendation and comparison of the data from the respective Tribe to the State data.

Objective 2

Identified a framework of utilizing a community-based participatory research model for dissemination that recognizes Tribal sovereignty. The steps for disseminating results to the two Tribal communities, including tribal specific reports with the BRFSS data include consultation with the Tribal Health Department and potentially presenting the results at a Tribal Council meeting.

Objective 3

The literature review using the search of the online database Scopus. Eight articles were found and full texts of studies that meet the inclusion of “Alcohol abuse”, “Binge drinking” and “American Indian” were reviewed. There is earlier literature on substance abuse, to include alcohol among American Indians youth and can be seen in large surveys conducted across the United States (see Oetting et al., 1988, 1989; Beauvais, 1992; Swaim et al., 1993).

Results

Objective 1

Appendix Figure 1, contains the detailed table to show the results of the Great Plains BRFSS project. In summary, large differences in the prevalence of health behaviors between the tribal population and respective state comparison population were noted for the following areas. For example, in Appendix Figure 2, when comparing the question “Considering all types of alcoholic beverages, how many times during the past 30 days did you have [5 for men, 4 for women] or more drinks on an occasion?” North Dakota State respondents reported 60.1% for zero drinks compared to the North Dakota Tribe of 17.4% for zero drinks and 31.4% for the South Dakota Tribe for zero drinks. Also, a difference can be seen in the North Dakota State results of 17.2% for three or more drinks, compared to the North Dakota Tribe at 50% for three or more drinks and the South Dakota Tribe at 54.9% for three or more drinks. Also, in the following section, detailed findings related to alcohol and historical trauma are presented.

Alcohol misuse. When comparing responses to the question “One drink is equivalent to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor. During the past 30 days, on the days when you drank, about how many drinks did you drink on the average?” The North Dakota Tribe respondents appear to report 52.9% drank 5 or more drinks on the average than North Dakota State respondent rate of 16.0%. For the South Dakota tribal responses to the same above-mentioned question, 40.0 % drank 5 or more drinks on the average. It is important to note, there is no South Dakota available data to compare for all five questions. A

comparison of the above question, between the two tribes appears to show similar percentage range of results.

Historical Loss and Alcohol Use. In the appendix Figure 3, it shows that 32.9% of the North Dakota respondents and 27.6% of South Dakota Tribe respondents think of about the question; “The losses from the effects of alcoholism on our people” statement daily and only 7.2% of the North Dakota Tribe respondents and 6.7% of South Dakota respondents never think about the “The losses from the effects of alcoholism on our people” statement.

Objective 2

Theoretical frameworks. In the context of addressing alcohol abuse in Tribal communities, there are three theories that can be used to build a framework regarding the role of awareness raising in changing policies and behaviors. First, the theory of planned behavior attempts to predict a person’s behavioral intention or how likely they are to perform a behavior (Sheppard, Hardwick & Warsaw, 1988). For the person to implement a behavior they must believe others approve of the behavior, intend to do the behavior, have a good attitude regarding the behavior, believe that others approve of the behavior, and have confidence in the changed behavior. The theory could be utilized with the final reports by raising public awareness campaigns (PACs) to change individuals’ behaviors. Second, the social cognitive theory is the understanding that a behavior is influenced by observing another person’s behavior. The theory details the processes of observational learning and modeling and the influences of self-efficacy of the results of the behavior. Third, the transtheoretical model describes the 5 stages of behavioral change from precontemplation, contemplation,

preparation, action, and maintenance. PAC's can be most useful when they can assess the persons level of readiness (Bandura, A., 2009). Thus, the social cognitive theory and the transtheoretical model can be utilized by educating the population to increase a person's level of readiness and role modelling behaviors. The above theories could be utilized by the two Tribes in combination with evidence-based interventions implemented in the communities.

Disseminations. The GPTCHB holds a yearly Great Plains IHS Area Budget Formulation Consultation meeting. These meetings enable IHS and Tribes to coordinate consultation in formulation of the IHS budget request, manages the preparation of the IHS budget justification and coordinates Congressional appropriations responses and briefings. Consultation with Tribes is the foundation of the IHS budget formulation process. The IHS budget formulation process is comprised of forums for Indian Tribes and organizations to interact with the IHS to establish program priorities and budget recommendations. Tribes, Indian organizations and other key stakeholders are actively involved in the budget formulation process to ensure the IHS budget reflects the evolving health needs of American Indian and Alaska Native people and communities. The IHS budget consultation meeting could provide an opportunity for dissemination of the Tribal BRFSS reports as well.

Objective 3

Eight articles were found and full texts of studies that meet the inclusion of "Alcohol abuse", "Binge drinking" and "American Indian" were reviewed. Two strategies were identified as potential interventions that can be used in the Great Plains region. The first strategy demonstrated using a community organizing intervention called Communities Mobilizing for Change on Alcohol. This intervention focuses on reducing the availability of alcohol to

underage youth and alcohol purchases by youth significantly declined (Wagenaar, et al., 2018). The second was called CONNECT and used an individual-delivered screening and intervention strategy. CONNECT is a school-based brief intervention providing support and motivation to prevent or reduce alcohol use by one on one consultations and follow up sessions on encouraging healthy drinking behaviors. Over the course of the study, researchers found that self-reports of alcohol use, including any use and heavy drinking episodes (five or more drinks on at least one occasion) in the past 30 days, was significantly reduced among students receiving either or both interventions, compared with persons in the control communities (Komro, et al., 2017).

Discussions

The goal of this project was to address gaps in the Tribal BRFS data. By describing the behavioral risk factors in two tribes, one can identify individual level evidence-based interventions on alcohol abuse and binge drinking.

According to CDC, binge drinking can be associated with other issues such as unintentional injuries, alcohol poisoning, violence, and sexual assault (CDC, 2018). Also, over 90% of U.S. adults who drink excessively report binge drinking in the past 30 days (CDC, 2018). Heavy drinking and binge drinking has been associated with many health problems, including: unintentional injuries (e.g., car crashes, falls, burns, drowning), intentional injuries (e.g., firearm injuries, sexual assault, domestic violence), alcohol poisoning, liver disease, neurological damage, sexual dysfunction, poor control of diabetes (CDC, 2017). Binge drinking is the most common, costly and deadly pattern of excessive alcohol use in the United States (NIAAA, 2018).

Binge drinking, and heavy drinking appears higher in the two tribal community than in the North Dakota Non-Hispanic White surveyed population. The results also appear to show alcohol misuse and binge drinking are a priority area for the two Tribes. Community based, and individual-level prevention strategies can be effective ways to reduce alcohol use among AI/ANs according to a study by the National Institute on Alcohol Abuse and Alcoholism (NIAAA).

The results of the Tribal BRFSS can assist in future policy development in terms of the need for increasing access and funding for AI/AN's in healthcare professions. The data could be used to access and apply for future funding for possible implementation of health promotion interventions. Limitations could consist of lack of access or expertise in applying for funding. Next steps by GPTEC and the respective tribes, could be to review the recommendations of the surveillance data results and consider community prevention education and possible intervention/s implementation with specific health disease concentrations and in partnership with the specified tribes and provide technical assistance in finding appropriate funding streams and potentially provide technical assistance with the application process.

While evidence-based alcohol treatments have been identified and promoted by federal and state policy makers, there are very limited interventions that include the cultural and historical aspect. There is a continued need for cultural appropriateness to have effective interventions in the future. Based on the literature review and evaluation, I reason there is a need for culturally appropriate evidence-based interventions implementation into the two Tribal communities.

The Institutes of Medicines Summary Findings recommends increasing awareness among key stakeholders to address health and health care disparities. It is important to educate and raise awareness with understandable evidence on the effectiveness of health interventions, policy recommendations, and services to adequately address the disparate findings (Nelson, A. 2002). Campaign messages need to be culturally-tailored to the target audience. Campaign messaging and branding need to be sensitive to relevant cultural attitudes and viewpoints (Chao & So, 2011; Reeler et al., 2009). By providing culturally relevant information that is illustrated with culturally appropriate messages, a meaningful connection is established with the target audience, increasing the likelihood of effective communication (Manchaiah & Zhao, 2012).

There are several limitations with this evaluation. It is difficult to interpret data without some comparison values. The closest comparison data available is the North Dakota and South Dakota State BRFSS, results of which have been provided alongside the survey results from the most recent year for which results were available. However, the State BRFSS results were not collected in the same manner as these surveys. The two tribal surveys were done in-person whereas the respective State BRFSS questions were asked by telephone. In addition, these surveys were collected as a convenience sample while the BRFSS was collected as a random sample analyzed with statistical weighting. In addition, because this is a sample of the population and because it does not perfectly represent the population from which the sample was drawn an assumption cannot be made that values presented here are fully representative of the entire population.

Small numbers are frequently encountered (that is, few people provided a specific answer). When the number of responses to a response (e.g., percentage of people responding yes) is less than 20, the percentage is marked with an asterisk and responses less than 5 were marked at “Not Reported” (NR). These values are somewhat less reliable. In some cases, so few people answered the question that meaningful analysis is not possible. In addition, some questions have large numbers of responses that are missing. For example, nearly half of the respondents for most of the alcohol use questions responded that they did not know the answer or didn’t want to answer. Had responses from those people been available, results might have been very different than the results presented. Therefore, these data are not very reliable (i.e., they may or may not reflect the true prevalence of the condition in the population). When response rates to a question are low, that is footnoted in the table. In all cases, missing values, including ‘Don’t know’ and ‘Refused’ responses, are excluded prior to analysis. Percentages represent the respondents who answered the question, along with the number of responses.

Due to time constraints, I was unable to provide a presentation to the respective two Tribal Leaderships, Tribal Health Departments and others that may have an interest. I would suggest that the two reports be printed and/or emailed and disseminated to the two IHS and Tribal Health Centers to include the Chief Executive Officer, Chief Operations Officer, Chief Medical Director, Public Health Nursing and the Tribal Health Director. I would also suggest allowing a downloadable version to be available on the GPTCHB’s website. Every year, a GPTEC conference is held, it may be advantageous to have printed copies available there for

distribution. If possible, it would be beneficial to have GPTEC present the findings in-person to the two tribes.

Conclusion

From the results of the Great Plains Tribal BRFSS, alcohol misuse appears to have higher rates in the two Tribes than State/s. There is opportunity for Tribal Leadership to consider implementing the identified evidence-based interventions that have seen success in other Tribal communities. Lastly, advancing health equity in Tribal communities remains a continued priority across Indian Country and this project sheds light on both significant barriers and opportunities to achieving health equity.

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Appendices

Figure 1

Great Plains BRFSS Topics
1. Health status
2. Health-related quality of life
3. Health care access
4. Sleep
5. Exercise
6. Diabetes
7. Oral health
8. Cardiovascular disease
9. Asthma
10. Disability
11. Tobacco use
12. Demographics
13. Alcohol consumption
14. Immunization
15. Falls
16. Seatbelt use
17. Drinking and driving
18. Women's health
19. Prostate cancer screening
20. Colorectal cancer screening
21. HIV/AIDS
22. Emotional support and life satisfaction
23. Tribe added questions (3-5 questions)

Figure 2

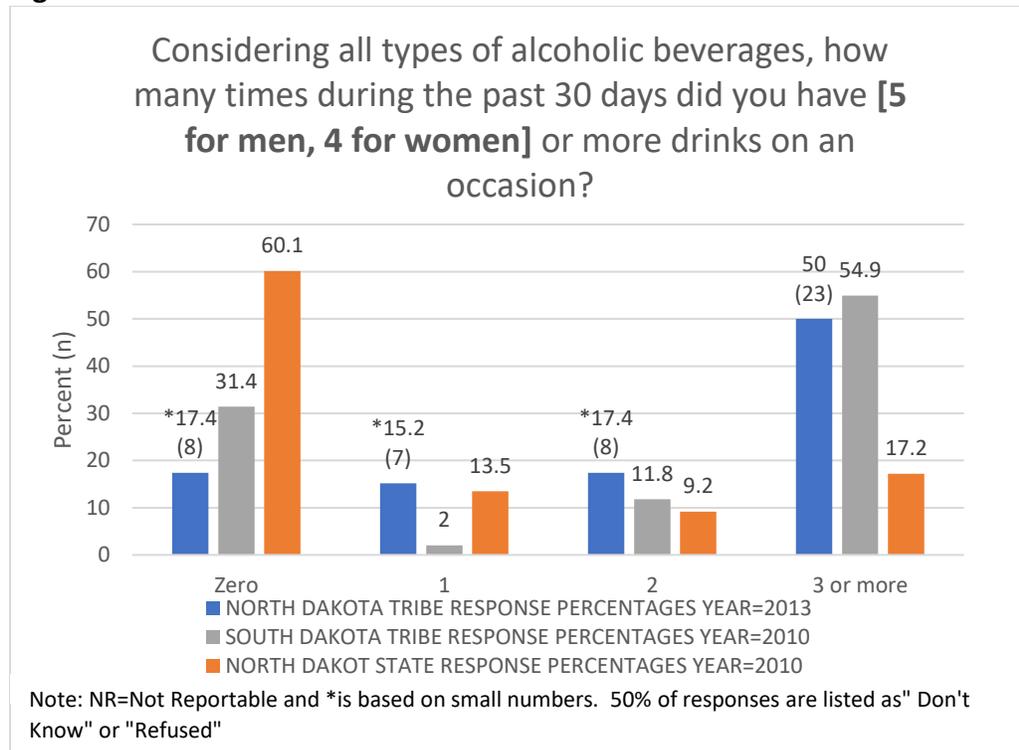


Figure 3

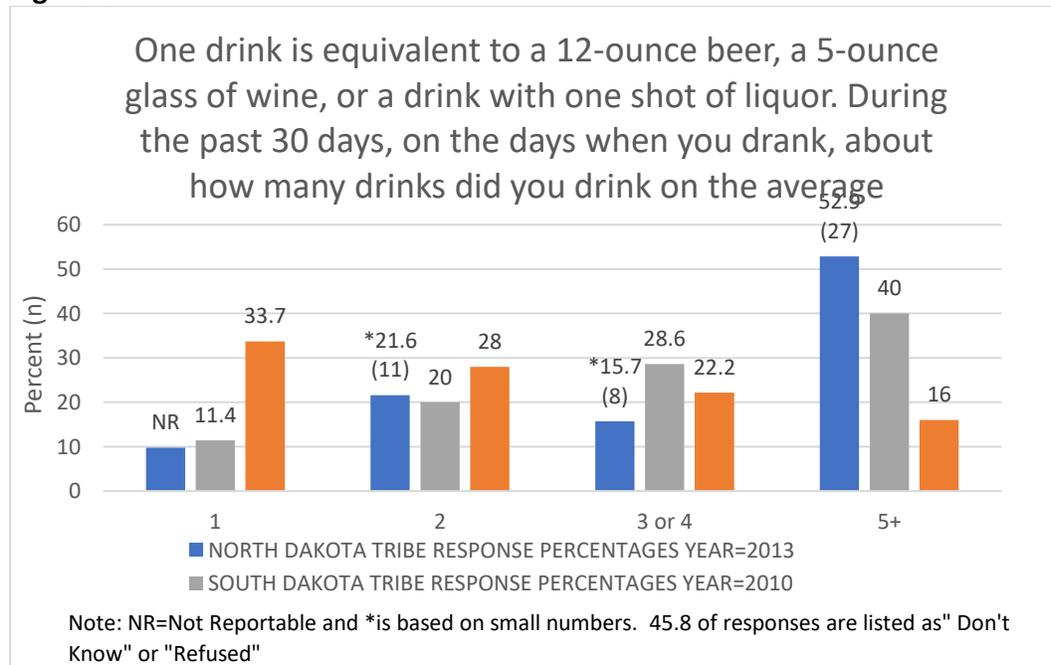
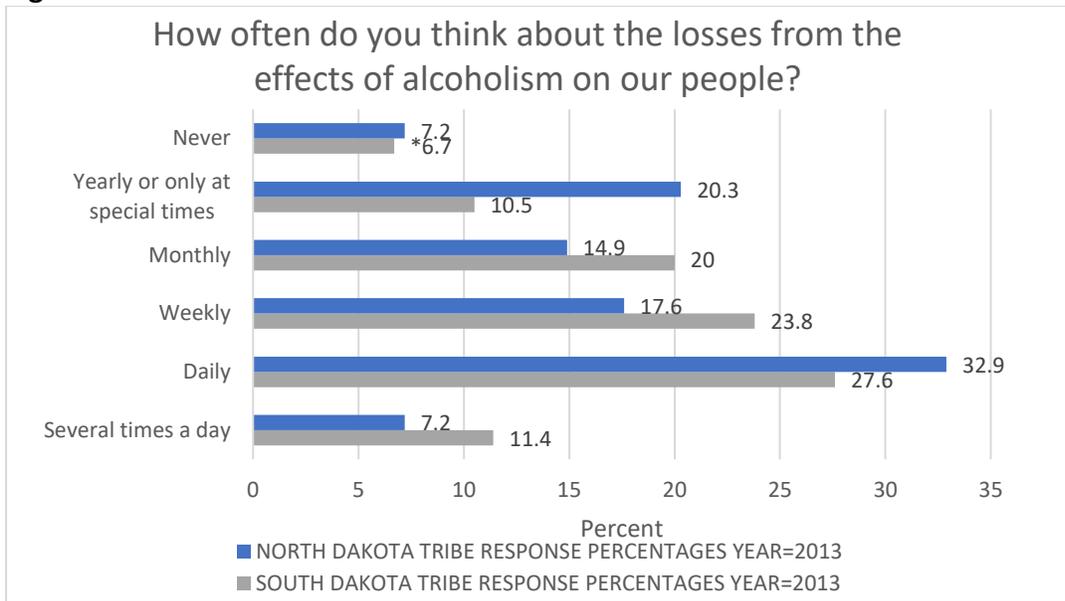


Figure 4



Service Learning/Capstone Experience Brief Reflection

The Great Plains Tribal Chairmen's Health Board (GPTCHB) operates from oversight and direction of the 18 Tribal Chairs/Presidents of the Great Plains region. It operates in this manner to ensure assisting with the needs of 18 tribes and tribal communities in the four-state region of South Dakota, North Dakota, Nebraska and Iowa, GPTCHB addresses the health necessities of its members by assisting in accessing health-related programs and resources. In addition to advocacy on behalf of the represented tribal members, the organization also provides critical health promotion and education outreach services through its various programs and departments. Furthermore, the health board advocates nationally for improved Indian health policies on behalf of the tribes and tribal communities it represents, which comprise nearly 170,000 individuals. GPTCHB incorporates the 7 traditional values of the Great Sioux Tribes. The values represent; Cultural, Integrity, Generosity, Respect, Ethics, Advocacy and Humility. The values can be seen in the environment of the daily workings of GPTCHB. They start all meetings with prayer, ensure elders are held in high regard and are given first opportunity to speak and served first in all that they do. GPTCHB operates in a manner that is representative of the people they serve.

Regarding my Service Learning/Capstone Experience, GPTCHB and GPTEC has given me the opportunity to expand my skill sets in terms of data evaluation. I was able to gain an in-depth knowledge of BRFSS and tribal BRFSS, sample sizes, data cleaning and appropriate dissemination constructs.

A few challenges I encounter was initially, I did not realize the time and tediousness of going through data in a excel format for 28 modules that include 1-10 questions per module, then ensuring each response is counted, totals match with percentages, Y and X axes are labeled

correctly, charts components are ample size and other design mechanisms are encompassed into the charts. Also, due to large travel occurrences and busy schedules within the GPTEC department, I would compile questions and schedule appointments with the respective staff. Unlike my expectations of knocking on door whenever a question arises. I can appreciate their time restraints and recognize the larger picture within the department.

I think I was able to bring my knowledge of tribal health, working in tribal communities to this project and being a tribal member, gave me a unique opportunity to provide input on a community level vs. a higher level of understanding that may not fit within a community review.