

ADDRESSING CERVICAL CANCER DISPARITIES AMONG AMERICAN INDIAN
WOMEN: IMPLEMENTING AN EDUCATIONAL MODULE FOR HEALTHCARE
PROVIDERS

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ABSTRACT

Many minority populations throughout the United States experience significant cancer-related disparities affecting their quality of life. American Indians represent one group of individuals who experience significant disparities in cancer screening, treatment, and health outcomes (Horowitz, 2012). Although effective screening exists, American Indian women are disproportionately affected by cervical cancer compared to other demographic groups. In relation to cervical cancer, American Indian women experience a higher prevalence, a more rapidly rising incidence, and higher mortality rates, which may be related to an interplay of unique risk factors, barriers in healthcare access, and cultural influences on health seeking behaviors (Schmidt-Grimminger et al., 2011).

While primary care providers have an opportunity to reduce health disparities, significant gaps exist related to awareness of cervical cancer disparities among American Indian women (Rogers & Cantu, 2008). Many healthcare providers do not routinely discuss cervical cancer screening recommendations with American Indian patients and feel their inadequate understanding of cultural beliefs serves as a barrier to increasing discussions about cervical cancer (Jim et al., 2012). Enhancing healthcare providers' knowledge of cervical cancer disparities may help facilitate the provision of culturally competent care and improve the quality of care for American Indian women.

Based on the need for enhanced awareness of cervical cancer disparities among American Indian women, a continuing education module was developed in collaboration with the American Association of Nurse Practitioners Continuing Education Center. The module incorporated information on American Indian culture, contributing factors to cervical cancer, and barriers to healthcare experienced by the population.

The module was evaluated through pretest, posttest, and evaluation questions. Data were collected for approximately three months with a total of 203 participants. After completing the module, nearly half of the participants (48.5%; n = 99) reported they planned to modify their practice, and approximately 71.5% (n = 145) of the participants planned to discuss screening recommendations routinely or often. Six pretest and posttest content-related questions demonstrated learning occurred as a result of the module. Overall, the results indicate the continuing education module had a positive impact on the participants and enhanced their awareness of cervical cancer disparities among American Indian women.

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DEDICATION

I dedicate this dissertation to God who has provided me with guidance and strength to complete this project. This dissertation is also dedicated to my husband, Luke, who has been my biggest ally and supporter. His unwavering belief in my abilities has provided me with motivation and confidence to persevere through some of the most challenging moments of this process. I will always be thankful for his extraordinary strength, honesty, patience, and loving help. I also want to dedicate this dissertation to my parents, Steve and Diane. Words cannot express the depth of my appreciation for their love, advice, and indescribable support throughout my entire life. They have instilled in me the values of passion, dedication, hard work, and resilience, which helped make this accomplishment possible. I am also thankful for my grandparents who have been my biggest cheerleaders and taught me so many important life lessons. Additionally, my classmates have also been a source of immense support. I feel blessed to share this experience with them and have developed lifelong friendships as a result of this process. I am forever grateful to all family and friends who have supported and encouraged me along this journey.

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CHAPTER ONE. INTRODUCTION

Background and Significance

Significant cancer-related disparities in health status and access to care currently exist among American Indian men and women, who represent approximately 1.5% of the population in the United States (Guadagnolo et al., 2009). During the beginning of the 20th century, American Indians were believed to be immune to cancer due to their aboriginal diet and natural living (Mahoney, Va, Stevens, Kahn, & Michalek, 2009). However, American Indians now experience disproportionately high rates of certain cancers, including liver, gastric, cervical, and colorectal cancer (Lammarino, Ahmed, & Ramkumar, 2012). *Healthy People 2020* is focused on eliminating disparities among American Indians and attaining health equity for all groups of people in the United States (Holm, Vogeltanz-Holm, Poltavski, & McDonald, 2010). To meet the goals of *Healthy People 2020* and improve the health of American Indians, factors contributing to cancer-related disparities among the underserved population must be identified and addressed. Enhanced awareness of health disparities can assist healthcare providers to better meet the unique healthcare needs of American Indians, improve the quality of care provided, and reduce the burden of cancer experienced by these people.

Cervical cancer is the third leading cancer among women worldwide, even though effective strategies exist for early detection and treatment of the disease (Fonseca-Moutinho, 2011). Since the development of the Papanicolaou (Pap) test for cervical cancer screening, incidence rates have steadily decreased for all demographic groups except American Indian women. In fact, cervical cancer rates among American Indian women increased between 2000 and 2009 (Jemal et al., 2013). The incidence rate of cervical cancer among American Indian women varies by geographic region with the highest rates observed in the Northern Plains. The

cervical cancer incidence rate among American Indian women in the Northern Plains is 11.3 cases per 100,000 people, which is significantly higher than the rate of 7.5 cases per 100,000 people for non-Hispanic, Caucasian women in the same region (Schmidt-Grimminger et al., 2011).

Not only do American Indian women experience a higher prevalence of cervical cancer, but they are also more likely to be diagnosed with metastatic cancer and experience poorer survival rates (Nuño et al., 2012). Approximately 50% of American Indian women who are diagnosed with cervical cancer present in the advanced stages of the disease compared to 36% of non-American Indians being diagnosed in advanced stages (Petereit, Guadagnolo, Wong, & Coleman, 2011). American Indian women living in the Northern Plains have also been found to have a six-fold increase in the incidence of metastatic cervical cancer compared to Caucasian women living in the same geographic region (Wilson et al., 2011). Lack of early detection and appropriate treatment of cervical cancer among the American Indian population is due to an interplay of patient, health system, and provider characteristics (Pandhi, Guadagnolo, Kanekar, Petereit, & Smith, 2010).

Because more American Indian women are diagnosed in advanced stages, cervical cancer mortality rates are high among the population. The cervical cancer mortality rate among American Indian women in the Northern Plains is 4.3 cases per 100,000 people, which is twice the mortality rate of the general population in the United States (Schmidt-Grimminger et al., 2011). Additionally, the age-adjusted mortality rate for cervical cancer is 79% higher among American Indians compared to Caucasians (Pandhi et al., 2010). Other factors contributing to higher mortality rates among the population include a higher proportion of treatment

interruptions, early discontinuation of treatment regimens prior to completion, and lack of continuity of care (Guadagnolo et al., 2009).

Problem Statement

American Indian women have been found to have the highest rates of never obtaining cervical cancer screening, as well as the highest proportion of abnormal tests results (Schmidt-Grimminger et al., 2011). Increasing cervical cancer rates suggest advances in screening and treatment are not reaching the underserved population (Pandhi et al., 2010). Educational campaigns are also not reaching the population, as knowledge disparities have been identified among many American Indian women related to human papillomavirus (HPV) vaccination and cervical cancer screening guidelines (Schmidt-Grimminger et al., 2013). Even though recommendations from health professionals significantly influence cancer screening behaviors among patients, only 29% of American Indians report receiving recommendations for cancer screening by their healthcare providers (Pandhi et al., 2010). Thus, interventions aimed at increasing primary healthcare providers' awareness of cervical cancer disparities among American Indian women may help facilitate improvements in healthcare delivery and patient outcomes.

Significant gaps exist related to the identification and understanding of health disparities experienced by the American Indian population. One challenge to reducing health disparities includes funding and staffing issues of the Indian Health Service (IHS), which is the primary organization delivering care to American Indian people (Holm et al., 2010). Primary care providers play a pivotal role in reducing the health disparities among the target population; however, there are often critical shortages of health professionals in the IHS, which results in high patient loads and overextension of IHS primary care providers. Additionally, primary care

providers may not fully understand cultural, educational, and attitudinal factors that influence healthcare utilization and screening behaviors among American Indian women. Enhanced awareness of cultural beliefs, contributing factors, and healthcare barriers may assist primary care providers in establishing trusting relationships and improving patient outcomes.

Incorporating culturally competent care into all healthcare visits has the potential to enhance the social, emotional, physical, and sexual health of American Indian women, as well as reduce the cervical cancer-related morbidity and mortality among the population (Rogers & Cantu, 2008).

Objectives and Project Description

The purpose of this practice improvement project was to increase nurse practitioners' awareness of cervical cancer disparities among American Indian women and enhance the quality of care provided to these women. The purpose of the project was met through achievement of the following objectives: 1) recognize common cultural health beliefs and traditional practices among American Indians, 2) identify the current cervical cancer disparities experienced by American Indian women, 3) state factors contributing to cervical cancer-related health disparities among American Indian women, and 4) identify interventions to improve cultural awareness, establish trusting relationships, and reduce cervical cancer disparities among American Indian women.

An hour-long online continuing education module was developed in conjunction with the American Association of Nurse Practitioners Continuing Education Center (AANP CE Center). The target population included all nurse practitioners providing primary care services to American Indian women with a specific focus on nurse practitioners working in North Dakota. The education module was created to educate nurse practitioners about existing cervical cancer disparities among American Indian women and offer strategies to enhance the quality of care.

Through heightening nurse practitioners' understanding of cervical cancer disparities among American Indian women, the provision of culturally competent care and the development of culturally appropriate public health programs can be achieved. Additionally, enhancing awareness of cervical cancer disparities may also increase discussions related to cervical cancer screening with American Indian women, which has the potential to improve screening rates and health outcomes among the target population.

CHAPTER TWO. LITERATURE REVIEW

Introduction

Approximately 5.2 million American Indians live in the United States with more than 560 federally recognized tribal nations (Norris, Vines, & Hoeffel, 2012). American Indians represent a diverse group of individuals living in all geographic regions of the United States, and various tribes have different histories, languages, cultural beliefs, and traditional practices. Substantial health disparities have existed for many years and continue to be present among the population (Mahoney et al., 2009). In addition to inequalities related to higher cancer-related mortality, American Indians also have higher mortality rates associated with cardiovascular disease, diabetes, alcoholism, motor vehicle accidents, homicide, suicide, and unintentional injuries. One common misconception is that all tribes have similar disparities; however, different health disparities are observed among various tribes and geographic locations. For example, American Indians living in the Northern Plains have much higher rates of tobacco use compared to very low rates of tobacco use among American Indians in the Southwest (Horowitz, 2012).

Variations in cancer-related health disparities between different American Indian tribes are not completely understood but are thought to be multifactorial (Mahoney et al., 2009). Differences in lifestyles, environmental exposures, genetics, socioeconomic status, education, occupation, health behaviors, and access to medical care likely play a role in an individual's cancer risk. New research evidence is demonstrating that American Indian women have unique risk factors for cervical cancer, with American Indian women living in the Northern Plains having a greater number of cervical cancer-related risks. Addressing health disparities necessitates the need for enhanced healthcare provider awareness of biological, social, psychological, and cultural influences, as well as improved access to care and policy changes

(Holm et al., 2010). Ultimately, reduction and elimination of cervical cancer disparities requires primary care providers to be knowledgeable about the population's cultural health beliefs and practices, unique risk factors for cervical cancer, and barriers preventing them from receiving adequate care.

History and Culture

American Indians represent 6.4% of the total population in North Dakota, and approximately 55% of the population lives on reservations (North Dakota Indian Affairs Commission, 2010). Within North Dakota, there are five federally recognized tribes, which include the Mandan, Hidatsa, and Arikara Nation, the Spirit Lake Nation, the Standing Rock Sioux Tribe, the Turtle Mountain Band of Chippewa Indians, and the Sisseton-Wahpeton Oyate Nation. While each tribe is unique, many American Indian communities have similar characteristics, such as close family relationships, community support, strong spiritual beliefs, church involvement, and small community size (Edgecombe et al., 2010). Mistrust of outside organizations is also commonly present among many American Indian communities due to historical experiences. Values of cooperation with an emphasis on the group rather than the individual are also observed in many American Indian communities. Other common values among American Indian communities include extended families and holistic problem-solving. Additionally, spirituality is often viewed as a way of life (O'Gagnon, 2012).

Although different tribes have distinct cultural values, traditions, and customs, there are a number of beliefs commonly shared among many American Indian people. According to traditional beliefs, everything on earth is interconnected and has a spirit or essence, including people, animals, plants, and the earth itself (American Cancer Society, 2013). Illness or disease is believed to occur due to spiritual problems. Individuals are more likely to be affected by

disease if they are unbalanced, think negatively, or lead unhealthy or immoral lifestyles. The Medicine Wheel is utilized as a reminder of the importance of balance in all aspects of one's life, as well as the continuous circle of life and death (Horowitz, 2012). Because balance is so important in American Indian culture, traditional healing rituals are focused on restoring balance of physical, emotional, mental, and spiritual well-being. Symbolic healing rituals may involve entire communities and include singing, dancing, and drumming ceremonies (Ryback & Decker-Fitts, 2009). Prayer, meditation, and personal reflection are additional important aspects of traditional American Indian healing (American Cancer Society, 2013).

Cultural beliefs are deeply rooted in the lives of many American Indians and significantly influence their health seeking behaviors. Healthcare providers must be aware of the target population's beliefs related to cancer and provide culturally competent care. Not only must healthcare providers be aware of the cultural values and practices, they also must learn to incorporate them into their treatment plans. Collaboration with traditional American Indian healers may potentially improve health outcomes (Ryback & Decker-Fitts, 2009). However, only 15% of American Indians reported telling their physician about using traditional healing practices (Horowitz, 2012). Thus, healthcare providers must determine if patients are seeing a traditional healer to assure the patients will not experience complications between traditional healing practices and Western medicine. Awareness of historical influences and specific cultural beliefs of various tribes may assist healthcare professionals to provide more culturally sensitive care and establish trusting relationships.

Mandan, Hidatsa, and Arikara Nation

The Mandan, Hidatsa, and Arikara are known today as the Three Affiliated Tribes; however, the tribes have separate stories of origin, as well as different cultural beliefs and

practices (Baker et al., 2002). The Mandan, Hidatsa, and Arikara joined forces following the small pox epidemic of 1837 for survival because the disease quickly killed many members of the three nations, including entire families, clans, spiritual leaders, medicine men, and chiefs. There are four different creation stories regarding the existence of the Mandan people, and all of the narrative stories include people coming from out of the earth. The three bands of Hidatsa also have different origin narratives with certain stories identifying Devils Lake as the birth lake of the tribe. According to the Arikara origin narrative, their people came out from Mother Earth, and a Mysterious Voice led them in their first travels on the earth.

Both the Mandan and the Hidatsa had complex kinship systems based on matrilineal descent including a clan and moiety, or a combination of clans (Baker et al., 2002). The Mandan and Hidatsa also had societies that enabled individuals of the same sex to spend time together feasting, visiting, and dancing. Today, tribal clanship is still practiced by the Mandan and Hidatsa, as well as adoptions into the clan. Certain societies still exist in the present day and remain active in annual celebratory ceremonies. Additionally, sacred bundles were important to the Mandan and Hidatsa people. Medicine bundles played a key role in ceremonial life, and bundles were transferred or inherited between members of a clan.

Sacred bundles also played an important role among the Arikara people and were used during religious festivals (Baker et al., 2002). The bundles contained items that symbolized the sacred teachings. Currently, 7 of the 13 bundles still remain and are being preserved by the people. The Arikara people utilized tobacco to make smoke offerings to all living things that were blessed by the Chief Above. The Chief Above also blessed the roots of plants, so plants and herbs were used for medicinal purposes of healing and curing diseases. The Arikara people were known as experts regarding their knowledge of herbs, and they were superb healers. Herbs

were thought to bring balance through the existence of a powerful connection between the healer and the herbs (Ryback & Decker-Fitts, 2009). Although the use of herbs for healing has been passed down from one generation to the next, there are a limited number of spiritual leaders that possess the knowledge of healing herbs today.

Standing Rock Sioux Tribe

The people of the Standing Rock Sioux Reservation are members of Dakota and Lakota nations and originally were woodland people who lived east of the Missouri (O’Gagnon, 2012). The Ojibwa referred to the Lakota and Dakota as Nadouwesou, and French traders corrupted and abbreviated the name to the last syllable, Sioux. The buffalo was a significant part of the Sioux people, as it served as a main source of food, utensils, clothing, and homes. A number of values were important to the Lakota and Dakota people, including honesty, generosity, bravery, cooperation, and respect for elders and children. Another important part of the culture of the Standing Rock Sioux tribe is the legend of *Ptesanwin*, or White Buffalo Calf Woman. According to the legend, a beautiful woman appeared before two hunters with a gift for the people, as well as information on how to live a good and sacred life. She taught the Sioux people for four days and then left the camp. As she departed the camp, she left behind a calf pipe, which is one of the most sacred objects in the Sioux culture and is utilized during important ceremonies.

The White Buffalo Calf Woman provided the people with seven sacred ceremonies; however, not all of the ceremonies are commonly performed today (O’Gagnon, 2012). Ceremonies that are still frequently performed today include adoptions, the Sun Dance, and the sweat lodge. The Sun Dance is a significant and sacred ceremony to Lakota and Dakota people involving prayer and sacrifice (Ryback & Decker-Fitts, 2009). Piercing skin of the breasts,

shoulders, or back is commonly performed during the ceremony. Sweat lodges are a sacred act of healing, spiritual practice, and purification. In the Lakota language, sweat lodges are called *inipi* and are utilized to purify and cleanse the mind and body through heat (Horowitz, 2012). All powers of the universe are incorporated into the *inipi*, including fire, water, air, and the earth. Sacred plants, such as sage and peyote, are also important and utilized during ceremonies. Sage is a holy herb frequently utilized to remove negative spirits or impurities and cleanse the body, home, or sacred items (Horowitz, 2012). Sage is also used during sweat lodges to help the spirits enter into the physical structure of the lodge (Ryback & Decker-Fitts, 2009). Additional uses of sage include medicinal purposes, prayer, and smudging ceremonies.

Another sacred ceremony is called *hunka kagapi*, or making relatives (O’Gagnon, 2012). This ceremony is utilized to create a bond between non-blood relatives that can never be broken. After the relation-making ceremony, the united individuals will share everything and die for one another. The next sacred ceremony is when a girl is made into a woman, or *ishnati alowanpi*. The ceremony includes a large feast from a girl’s father when she has her first menstrual cycle or moon. Menstruating women are forbidden to be near healing ceremonies or Sun Dances because they possess a sacred power that is stronger than the power of medicine men and may make medicine men ineffective. *Nagi uhapi*, or soul keeping, is an additional sacred ceremony that involves keeping the soul of a deceased loved one for one year. This involves watching over the soul’s home, remembering the one who died constantly, and living in a traditional manner. The White Buffalo Calf Woman also shared the sacred ceremony of *hanblecheya*, or vision quest, which involves a young man fasting and praying in order to determine the purpose of his life. The last ceremony shared by the White Buffalo Calf Woman is *tapa wakayapi*, or throwing of

the ball ceremony. This ceremony is utilized to demonstrate gratitude for life, and all ceremonies incorporate Lakota and Dakota values necessary to live a good life.

Spirit Lake Nation

The people of the Spirit Lake Reservation are members of Dakota nations who migrated from Minnesota to the Northern Plains (Garcia et al., 1997). They are also called Mni Wakan Oyate, which means “The People of the Spirit Water.” The story of their beginning has been passed down orally through Dakota historians and holy men. According to their creation story, a band of people existed beneath the earth many years ago. A young brother went exploring into an unknown area and noticed something blue above him. He reached up to touch the blue area and discovered it was a whirlpool. The whirlpool took the boy to the surface of the earth where he noticed how beautiful the earth was and began wandering. The boy’s sister started to look for him beneath the earth and followed his tracks to the whirlpool. She was also taken to the surface of the earth and began wandering. After many days, she became thirsty and put a stone in her mouth to prevent extreme thirst. She accidentally swallowed the stone, which developed into a child within her body. She gave birth to a boy called stone boy, and this was the beginning of the Dakota people on the earth.

The Dakota people of Spirit Lake Nation had a close relationship to the earth and believed the earth is the mother of all (Garcia et al., 1997). They believed they are related to animals and all living things on the earth and thus, demonstrated great respect for animals (Ryback & Decker-Fitts, 2009). Wakan is the key to understanding Dakota existence and is also known as the Great Mystery or Great Spirit. Wakan Tanka presented certain animal spirits to medicine men and leaders through dreams or visions, and various animals provided different amounts of power, with bear medicine being the most powerful (Garcia et al., 1997). The

Dakota also had a strong kinship system with the utmost importance being placed on relationships, a strong sense of community and belonging, generosity, and cooperation (Horowitz, 2012). Elders were respected for their wisdom and knowledge, and loyalty to other kin was important for the village to thrive. The Fort Totten Treaty Pipe is another important aspect of Dakota culture that was utilized at the conclusion of the signing of the Treaty of 1867 (Garcia et al., 1997). The pipe was viewed as an instrument for prayer and was frequently used to conclude ceremonies.

Although certain parts of Dakota culture have been impacted or lost throughout the years, various ceremonies and values have survived and are incorporated into today's Dakota culture (Garcia et al., 1997). One important value is that of quietness, and Dakota people may not speak out in public due to this value. Quietness is important because all of the Dakota history was transmitted orally, so listening was an important part of learning. The kinship system has also been adapted and continues to exist today. Respect for elders is extremely important, and extended families often come together to care for elders in the home. The Dakota people continue to participate in ceremonies to communicate with the Great Spirit, including the sweat lodge, vision quest, and the Sun Dance (Horowitz, 2012). Tobacco is often used during ceremonies to strengthen prayers and communication with the Great Spirit.

Sisseton-Wahpeton Oyate Nation

The Sisseton-Wahpeton people consist of two joined bands of the Eastern Dakota Nation (Garcia et al., 1997). Another name for the Wahpeton band is 'Dwellers among the Leaves,' and the Sisseton band is known as the 'People of the Ridged Fish Scales.' The Sisseton and Wahpeton bands originally inhabited lands in Canada and Minnesota, as well as North and South Dakota (O'Gagnon, 2012). With coercion, the Sisseton and Wahpeton signed the Treaty at

Traverse Des Sioux in 1851, in which they surrendered much of their land in Minnesota and South Dakota. The current Lake Traverse Reservation located in South Dakota and Southern North Dakota was established with the signing of the Lake Traverse Treaty of 1867.

Because the Sisseton and Wahpeton bands also comprise the Dakota of Spirit Lake Nation, many cultural beliefs and practices are shared between the two reservations (Garcia et al., 1997). The Sisseton-Wahpeton people also believe that White Buffalo Calf Woman came to the Dakota-Lakota-Nakota Nation to provide the sacred pipe and the seven sacred ceremonies previously discussed. Some of the sacred ceremonies are commonly performed today, including the sweat lodge and Sun Dance (O’Gagnon, 2012). Dance and song continue to be important to the Dakota people and are present during powwows, honor songs, and death songs, as well as many other occasions. Medicine men and traditional healers continue to impact the people through their wisdom and knowledge of religious ceremonies. Kinship systems also exist with immediate and extended family being a principal value of the Dakota people (Horowitz, 2012). Other important values include compassion, bravery, generosity, and harmony. Respect for Mother Earth and all that she has created is an additional cardinal value of the Dakota people.

Turtle Mountain Band of Chippewa Indians

The Chippewa people refer to themselves as Anishanabe, which means ‘Original People’ (Poitra & Poitra, 1997). The story of their beginning has been documented on birch bark scrolls and passed down orally by elders. Kitchi Manito is known as the Great Spirit and created the Chippewa people after a dream. He first gave life to rock, water, fire, and wind. The stars, moon, sun, and earth were then created from the four elements, and each was given a special power. Kitchi Manito then created plants and provided them with the spirit of healing. Animals were then created and lived in harmony with Mother Earth. Man was the last of Kitchi Manito’s

creations and was created through combination of the four elements of Mother Earth and the breath of Kitchi Manito. Man was the last form of life on Mother Earth, and thus, considered everything on Mother Earth as elders.

The Chippewa people practiced the Midewewin religion, which consisted of a group of priests and medicine healers (Poitra & Poitra, 1997). Midewewin beliefs include that all plants and animals possess a spirit that is a part of the Divine Creator. Humans would not exist without the earth, plants, and animals and must live as one with all living things. Other Midewewin values include respect, sharing, honor, and learning. People who follow the teachings of the Midewewin were believed to live long, balanced, and healthy lives. Additionally, individuals were thought to live to old age if they had a dream in which the Great Spirit appeared to them in the form of a strong man.

Although there are a number of factors that have influenced the evolution of Turtle Mountain Chippewa culture into what exists today, many elders are working to preserve traditional customs and cultural practices (Poitra & Poitra, 1997). Today, a large portion of the Turtle Mountain Chippewa follows the Catholic religion. Powwows continue to be held throughout the year and are utilized as an opportunity to honor the past and dream for the future (Horowitz, 2012). Participation in Sun Dance ceremonies is also common among Chippewa people. Another important tradition is the Pipe of Peace smoking ceremony, which represents man's relationship to the Great Spirit, Mother Earth, plants, animals, and other human beings (Ryback & Decker-Fitts, 2009). The drum is an important aspect in both spiritual and social gatherings. Additionally, herbs are viewed as a method of restoring emotional, intellectual, spiritual, and physical balance. Tobacco, sweet grass, sage, and cedar are sacred medicinal plants used in healing ceremonies, as well as many other aspects of life. Tobacco is offered to

Kitchi Manito during prayer and when using an element of the earth for food or medicine (Poitra & Poitra, 1997).

Cancer among the American Indian Population

Historically, infectious diseases were the most common cause of death for American Indians (Mahoney et al., 2009). The population experienced low rates of chronic diseases and cancers in the past, which has been attributed to their spirituality, diet, active lifestyle, knowledge of healing herbs, and traditional practices. However, cancer rates have dramatically increased among American Indians over the past century, whereas other demographic groups have seen a decrease in cancer rates (Pandhi et al., 2010). While the incidence rate for all cancers in the United States is 509.8 cases per 100,000 people, the incidence rate for all cancers among American Indians in North Dakota is greater at 554.6 cases per 100,000 people (North Dakota Department of Health [NDDOH], 2010). Common types of cancer among American Indians include lung, breast, cervical, stomach, liver, and colon cancer (Petereit et al., 2011).

Cancer mortality rates among all other racial and ethnic groups have also decreased since 1975, but there has been no change in cancer mortality trends among American Indian people (Pandhi et al., 2010). Cancer is now the second leading cause of death among American Indians, behind only heart disease. The age-adjusted cancer mortality rate among American Indians living in North Dakota is 1,337 cases per 100,000 people, which is significantly higher than the cancer mortality rate of 162 cases per 100,000 people in North Dakota and 173 cases per 100,000 people in the United States (NDDOH, 2010). Additionally, mortality rates are 80% higher among American Indians compared to the general population for cancers in which effective screening interventions are available, such as colon, breast, and cervical cancer (Pandhi et al., 2010).

Even though screening strategies exist for certain cancers, the population continues to experience significant cancer-related disparities. Effective screening interventions exist for prevention or early detection of cervical cancer; however, American Indian women have a higher prevalence, a rapidly rising incidence, and inferior survival rates (Schmidt-Grimminger et al., 2011). These cancer disparities are likely due to a combination of individual characteristics and risk factors, environment, and community or healthcare system barriers (Pandhi et al., 2010). In order to reduce cervical cancer disparities, healthcare providers must understand the history of cancer and traditional healing practices among the population, as well as the factors contributing to cervical cancer and the healthcare barriers experienced by American Indian women.

Contributing Factors Associated with Cervical Cancer

There are a number of general risk factors that have been identified and may increase one's risk of cervical cancer. Recognized risk factors for cervical cancer include HPV infection, chlamydia infection, and immunosuppression (American Cancer Society, 2013). A number of behavioral risk factors may also heighten the risk for cervical cancer, such as early initiation of sexual activity, risky sexual behaviors, and tobacco use. Inadequate diet and obesity are additional risk factors for cervical cancer (Ghosh et al., 2008). Family history of cervical cancer, multiple full-term pregnancies, diethylstilbestrol use, and long-term oral contraceptive use have also been shown to increase the risk of developing cervical cancer (American Cancer Society, 2013).

Human Papillomavirus

HPV is the primary risk factor for cervical cancer. There are over 100 related viruses or serotypes of HPV. Low-risk HPV serotypes lead to genital warts or condyloma acuminatum, while high-risk HPV serotypes are strongly correlated with cervical cancer (Rogers & Cantu,

2008). Approximately 15 HPV serotypes have oncogenic properties and account for 99.7% of all cervical cancers. Common high-risk serotypes include HPV 16, 18, 31, 45, and 52. Approximately 70% of cervical cancers worldwide are caused by HPV serotypes 16 and 18 (Alfonsi et al., 2011).

American Indian women experience disparities in the prevalence of HPV infection, which may contribute to higher incidence and mortality rates. Dunne et al. (2007) determined American Indian women have significantly higher rates of high-risk HPV serotypes. The overall prevalence of high-risk HPV in the United States was approximately 15%, whereas the prevalence among American Indian women equaled 25%. Alfonsi et al. (2011) also found higher rates of high-risk HPV among American Indian women compared to Hispanic and African American women. Additionally, American Indian women living on reservations in the Northern Plains are disproportionately affected by HPV infection. Schmidt-Grimminger et al. (2011) discovered HPV infection rates as high as 42% for American Indian women in the Northern Plains compared to 23% for Caucasian women. American Indian women were also more likely to have multiple HPV infections, as well as different oncogenic serotypes of HPV that are not covered by the vaccine. Higher rates of HPV among American Indian women indicate a need to improve preventative strategies among American Indian women, such as increased HPV vaccination and condom use.

Chlamydia Infection

Although high-risk HPV is the main cause of cervical cancer, *Chlamydia trachomatis* has also been linked with cervical cancer. Du et al. (2010) determined higher chlamydia rates were associated with increased cervical cancer incidence and mortality rates in women throughout the United States. *C. trachomatis* may lead to cervical carcinogenesis by altering cervical cells and

providing target cells for acquiring HPV infection (Lehtinen et al., 2010). *C. trachomatis* may also interfere with the ability of the immune system to detect persistent high-risk HPV serotypes. Additionally, chlamydia has been found to enhance the progression of cervical cancer (American Cancer Society, 2013).

A large disparity exists between the prevalence of chlamydia among American Indian women compared to the overall United States population. The chlamydia rate among American Indians is 816.2 cases per 100,000 people, whereas the national rate is 409.2 cases per 100,000 people (Centers for Disease Control and Prevention [CDC], 2012). An especially high rate of chlamydia is seen in young American Indian women between the ages of 15 and 24, as the chlamydia rate for this population is 4,701.2 cases per 100,000 people. Approximately 18.6% of women between the ages of 15 to 19 who were screened at IHS clinics in North Dakota tested positive for chlamydia (Dicker, Mosure, Kay, Shelby, & Cheek, 2008). The findings suggest more emphasis should be placed on sexually transmitted infection (STI) prevention, education, screening, and treatment among American Indian women.

Immunosuppression

Infection with the human immunodeficiency virus (HIV) places women at higher risk of developing cervical cancer (American Cancer Society, 2013). Because HIV infection reduces the ability of the immune system to destroy cancerous cervical cells and prevent metastasis, cervical cancer may progress rapidly in affected individuals. American Indians represent six percent of the newly diagnosed cases of HIV and have experienced dramatic increases in the infection rate compared to other ethnic groups (Dennis, 2009). Contributing factors to the increasing incidence of HIV infection among American Indians include application of tattoos

with contaminated needles, intravenous drug use, and lack of protection during sexual intercourse.

Onset of Sexual Activity

Early initiation of sexual intercourse is a risk factor for the development of HPV infection. Engaging in sexual intercourse at a young age increases the risk of HPV infection and cervical cancer because the immature cervix is more susceptible to persistent HPV infections (Louie et al., 2009). Persistent HPV infections may progress to cervical cancer. Not only is early initiation of sexual intercourse associated with cervical abnormalities, but it is also associated with an increased risk of invasive cervical cancer. Women who engage in sexual intercourse before the age of 18 have a five-fold risk of developing invasive cervical cancer compared to women who did not have intercourse until the age of 22 or older (Braaten & Laufer, 2008).

American Indian teens begin sexual experiences at a younger age compared to the average age in the United States (Garwick, Rhodes, Peterson-Hickey, & Hellerstedt, 2008). American Indian adolescents have been found to be three times more likely to engage in sexual intercourse before the age of 13 compared to Caucasian adolescents (Rutman, Park, Castor, Taulii, & Forquera, 2008). Early initiation of sexual activity among American Indian females may be related to a number of environmental factors, such as being the daughter of a teen mother with less formal education, dropping out of high school, using alcohol or drugs, and having lower self-esteem (Palacios, Chesla, Kennedy, & Strickland, 2012). Because many American Indian females engage in sexual intercourse at a young age, healthcare providers play an important role in educating adolescents and parents about the risks of HPV and cervical cancer associated with sexual activity at a young age.

Risky Sexual Behaviors

Not only does early initiation of sexual activity increase one's risk of HPV and cervical cancer, but it is also associated with other risky sexual behaviors, such as unprotected sex and multiple sexual partners (Braaten & Laufer, 2008). Sexual behavior greatly influences one's exposure to HPV and the development of HPV infections. Rutman et al. (2008) determined American Indian female adolescents have a higher prevalence of risky sexual behaviors compared to their Caucasian peers. American Indian teens are more likely to engage in sexual activity with multiple sexual partners, increasing their exposure to HPV. They are also less likely to use condoms (Hagen, Skenandore, Scow, Schanen, & Clary, 2012). Additionally, many adult American Indian women engage in sexual intercourse without utilizing condoms and may have more lifetime partners (Dennis, 2009). Thus, unprotected sexual activity and multiple partners increase the risk of HPV exposure and cervical cancer among American Indian women.

American Indian youth have also been found to be more likely to experience substance abuse problems, which may lead to sexual risk taking and mental health problems (NDDOH, 2010). Many American Indian teens report having their first drink before the age of 13, and early alcohol consumption is associated with a higher number of sexual partners and dating violence (Ramisetty-Mikler & Ebama, 2011). Additionally, 50% of American Indian adolescents report using marijuana compared to 12% of non-Indian adolescents. Use of alcohol or drugs during sexual activity may also result in failure to use contraceptives, which may lead to unplanned pregnancies and transmission of STIs, such as HPV (Hagen et al., 2012).

Intimate Partner Violence

While 25% of women in the United States have encountered intimate partner violence (IPV), approximately 75% of American Indian women report experiencing IPV (Mylant &

Mann, 2008). Studies have demonstrated American Indian women who have experienced IPV, assault, or rape are more likely to engage in high-risk behaviors for HIV and HPV, such as inadequate condom use, multiple sex partners, and substance abuse (Rutman et al., 2008; Walters, Beltran, Evans-Campbell, & Simoni, 2011). Trauma, substance abuse, and risky sexual behaviors place American Indian women at an increased risk of exposure to HPV, HIV, and other STIs. These multiple risk factors must be addressed holistically with American Indian women to improve health outcomes and potentially reduce the incidence of cervical cancer.

Tobacco Use

Smoking cigarettes is another recognized factor associated with cervical cancer, as women who smoke have a two-fold increase in their risk of developing cervical cancer compared to non-smokers (American Cancer Society, 2013). Research has demonstrated women who smoke cigarettes have tobacco chemicals in their cervical mucus, which may damage cervical cells (Fonseca-Moutinho, 2011). The presence of tobacco byproducts in cervical mucus has been shown to contribute to cervical cancer through damaging cervical cell deoxyribonucleic acid (American Cancer Society, 2013). Additionally, smoking also reduces the immune system response to HPV.

Tobacco has both social and cultural uses among American Indian people (O’Gagnon, 2012). Tobacco is an important aspect of American Indian culture because it is believed to have medicinal and spiritual properties. A common misconception among American Indian people is that their recreational use of cigarettes is a cultural extension of tobacco use for ceremonial purposes, which may contribute to high rates of tobacco use among the target population (O’Malley, Brown, Colmers, Stephenson, & Hussein, 2008). American Indians have the highest prevalence of tobacco use among all demographic groups, and smoking rates in some American

Indian communities are higher than 50% (Cobb, Wingo, & Edwards, 2008). The prevalence of current smokers among American Indian women in the Northern Plains is 37.7% compared to 22.2% among non-Hispanic Caucasian women (Wilson et al., 2011). Higher tobacco use, in addition to other risk factors, may contribute to the higher rates of cervical cancer among American Indian women.

Diet

Lack of adequate fruits and vegetables is associated with an increased risk of cervical cancer (American Cancer Society, 2013). Women with a higher intake of fiber, vitamin C, vitamin A, vitamin E, and folate are 40% to 60% less likely to develop cervical cancer; however, many American Indians have insufficient diets and do not consume an adequate daily intake of fruits and vegetables (Ghosh et al., 2008). Approximately 45% of American Indian women live below the federal poverty line, which may limit their access to healthy foods and encourage increased utilization of commodity foods (Richards & Mousseau, 2012). Commodity foods are available to low income American Indian families living on reservations and are often high in calories and fat (Steele, Cardinez, Richardson, Tom-Orme, & Shaw, 2008). Berg et al. (2012) found only 37% of American Indians consumed the recommended servings of fruits and vegetables daily. Additionally, a higher proportion of American Indians consume only one or two servings of fruits and vegetables daily compared to their Caucasian counterparts (Steele et al., 2008).

Holm et al. (2010) conducted interviews with American Indian men and women and found only 17% of the participants received 5 or more servings of fruits and vegetables daily. Additionally, the researchers concluded fruit and vegetable consumption was much lower in North Dakota compared to the overall United States population, which demonstrates the impact

of geographical factors. The lack of adequate fruit and vegetable intake may be related to cost, seasonal variations, and access to quality fruits and vegetables. Thus, American Indians living in the Northern Plains may be at greater risk of inadequate nutrition due to geographical and environmental factors. Improving fruit and vegetable consumption among American Indian women is important to reduce many health complications and disparities, including cervical cancer.

Obesity

Berg et al. (2012) found approximately 45% of American Indians who participated in their study received adequate amounts of physical activity, whereas only 25.9% of American Indian youth between the ages of 18 and 24 reported meeting physical activity requirements on a national health survey (Mulye et al., 2009). Lack of nutritious diets combined with inadequate physical activity may contribute to obesity among American Indian women, as well as type II diabetes mellitus, hypertension, cardiovascular disease, and hyperlipidemia. American Indian women are more likely to be obese compared to Caucasian women. Approximately 39.7% of American Indian women are obese, which increases their risk of cervical cancer (Office of Minority Health, 2012). Women who are overweight have a higher risk of developing adenocarcinoma of the cervix (American Cancer Society, 2013). Healthcare providers must be cognizant of risk factors for obesity among American Indian women, including inactive lifestyles and lack of adequate fruit and vegetable intake. Providing education to the population regarding diet, exercise, and weight management is important to promote lifelong health and reduce risk factors for cervical cancer.

Barriers to Healthcare

American Indian women experience a number of barriers to healthcare that may lead to cancer-related health disparities. Cultural beliefs, language barriers, and education are factors that may reduce healthcare utilization among American Indian women (Lammarino et al., 2012). Lack of knowledge among healthcare providers regarding American Indian culture and beliefs can lead to mistrust in Western medicine, as well as inadequate healthcare education and cancer screening interventions. Other barriers to care for the target population include beliefs regarding cancer screening and HPV vaccination (Schmidt-Grimminger et al., 2011).

Cultural Beliefs

Although many cultural beliefs provide a source of strength and support for American Indians, there are some cultural beliefs that may present barriers to adequate screening and diagnosis of cervical cancer. Discussions related to cancer are thought to lead to the development of cancer among a proportion of the population (Knobf et al., 2007). Cancer may also be viewed as a punishment for wrongdoing and may be accompanied by guilt and shame. Additionally, Guadagnolo et al. (2009) found American Indians exhibit more negative attitudes related to cancer and cancer treatment. Many American Indians also believe they should not discuss their sexuality with others, which presents a barrier in screening for cervical cancer risks (Palacios et al., 2012). Enhanced awareness of cultural beliefs among this underserved population is important to improve culturally competent care and enhance health outcomes.

Language

Storytelling is a traditional method of sharing information among American Indians, and storytelling also plays a role in healing (Horowitz, 2012). Because of the strong traditions of oral history, many American Indians learn about illnesses and diseases through this method of

communication. However, many words in their spoken languages do not have a direct translation to English (Knobf et al., 2007). In fact, 217 American Indian languages are currently spoken, and most do not contain a word for cancer (Lammarino et al., 2012). The word cancer in the Navajo language translates to a non-healing sore, which demonstrates a potential misperception among American Indian people in relation to the severity of cancer. Additionally, Schumacher et al. (2008) found women who spoke only American Indian languages were less likely to have a Pap smear in the last three years compared to women who spoke English. Healthcare providers must be aware of potential language barriers to improve knowledge and cervical cancer screening among American Indian women.

Education

American Indians are less likely to receive a high school diploma compared to other demographic groups, and studies have found they have less basic knowledge related to cancer screening recommendations (Guadagnolo et al., 2009). Additionally, less educated women are not as likely to comply with screening recommendations (Rogers & Cantu, 2008). Survey data has also demonstrated American Indian teens are less likely to be educated about HIV in school (Rutman et al., 2008). Tran, Rosenberg, and Carlson (2010) determined American Indian adolescents do not receive tobacco cessation education as often compared to Caucasian teens. Education related to HIV and tobacco cessation is extremely important for American Indian teens and women, as they are contributing factors to cervical cancer.

Mistrust of Healthcare Providers

Because of broken treaties and forced acculturation, there is historical mistrust of Western providers among American Indians (Horowitz, 2012). According to the Minnesota Department of Health (MDH, 2012), 23% of American Indian adults and 14% of teens and

children in Minneapolis and Saint Paul reported they did not trust their doctors, and they attribute their mistrust to providers' lack of knowledge regarding their culture, traditional medicine, spiritual healing, religion, and communication styles. American Indians also regard the advice of traditional healers more highly compared to Western medicine providers (Horowitz, 2012). Lower levels of satisfaction with Western medicine are common among the population (Guadagnolo et al., 2009). Mistrust in Western providers has been found to lead to lack of preventative care and education for American Indians, including cervical cancer screening.

Lack of Healthcare Provider Knowledge

Healthcare providers must not only understand American Indian culture and the complex factors impacting one's cervical cancer risk, but they must also remain up-to-date on healthcare guidelines and recognize prevalent health problems. However, primary healthcare providers may lack necessary knowledge to provide high-quality care to the target population. According to Schmidt-Grimminger et al. (2013), many Tribal and IHS providers are not aware of the increased prevalence of abnormal pap smears among American Indian women. Similarly, a portion of healthcare providers remain uninformed regarding the increased rate of HPV among American Indian women and report they need further education to counsel patients regarding the HPV vaccine and cervical cancer risks.

Providers also frequently forget to consider environmental stressors that may influence sexual behavior among American Indians, as the stressors may differ from those in non-Indian communities (Anastario, FourStar, & Rink, 2013). Psychological symptoms and health behaviors may be linked to historical trauma experienced by American Indians, such as loss of land, traditional customs, language, and various other cultural losses. Lack of provider

knowledge regarding historical, environmental, and cultural influences may potentially lead to further mistrust and poorer health outcomes among the American Indian population.

Lack of Culturally Competent Health Education

Differences in educational attainment may be related to diverse cultural traditions, values, histories, and languages among American Indian people (Horowitz, 2012). Education, independent learning, and autonomy are important aspects in the Western world; however, interdependent learning, social support, and trusting relationships with teachers are valued in many other areas of the world, as well as among American Indian people (Fryberg et al., 2013). American Indians have been found to have higher rates of academic success with an interdependent learning atmosphere and maintenance of strong relationships, whereas Caucasian students excel in an independent learning environment. Higher levels of cultural identification are also associated with enhanced academic success among American Indians and serve as a protective factor when students' cultural values do not match with teachers' values. Thus, cultural identity and values must be considered when providing health education to American Indians, and interdependent educational frameworks have the potential to enhance understanding and health behaviors among the population, as well as improve health outcomes.

Cancer Screening

American Indians have the lowest rates of cancer screening utilization in the United States (Petereit et al., 2011). Wilson et al. (2011) determined only 37.8% of American Indian women had Pap smear screening for cervical cancer within the previous three years. Additionally, 40% of women in the study who had abnormal Pap smear results did not comply with annual follow-up screening. Cervical cancer screening probability among American Indian women living in the Northern Plains is estimated to be between 26% and 45% (Pandhi et al.,

2010). Additionally, women living in rural areas do not utilize cervical cancer screening as frequently as women in urban areas (Nuño et al., 2012). American Indian women in the Northern Plains frequently live on reservations and may be geographically isolated, further contributing to inadequate cervical cancer screening (Horowitz, 2012). Low cervical cancer screening rates among American Indian women may contribute to the higher cervical cancer mortality among the population, and culturally appropriate education and additional interventions to improve cervical cancer screening are necessary.

HPV Vaccination

American Indian women have lower rates of HPV vaccination, which may increase their risk of cervical cancer (Jim et al., 2012). According to the CDC (2013), only 36% of American Indian adolescents received the HPV vaccine in 2012, which is lower than other demographic groups. Knowledge gaps and misconceptions about the HPV vaccine may contribute to lower vaccination rates among the target population. A study conducted by Schmidt-Grimminger et al. (2013) found many American Indians had limited knowledge related to HPV vaccination, and the participants desired more education on the topic from healthcare providers. Common identified misconceptions include that the vaccination will cause cancer and that cervical cancer is genetic or hereditary. Many American Indian women attribute the existing misconceptions and knowledge deficit regarding HPV vaccination to inadequate education on reservations (Hodge, Itty, Cardoza, & Samuel-Nakamura, 2011). Additionally, many parents report never receiving recommendations regarding the HPV vaccination from their Tribal or IHS providers (Schmidt-Grimminger et al., 2013).

Low HPV vaccination rates among the American Indian population may be due to attitudinal beliefs or cultural perceptions among adolescents, young adults, parents, and the

community. American Indian women have reported feeling concerned the HPV vaccines do not work effectively with their population (Alfonsi et al., 2011). Additionally, IHS facilities have not always paid for HPV vaccines, resulting in decreased vaccination rates among the target population (Schmidt-Grimminger et al., 2011). American Indian parents also reported feeling the vaccine was ‘too new’ and will encourage sexual activity in their children (Jim et al., 2012). Failure of adolescents to follow-up for subsequent doses has also been identified as a barrier for HPV vaccination among American Indian females. American Indian parents and adolescents may benefit from education related to HPV vaccines, as the education can provide valuable information and improve vaccination rates.

Access to Healthcare

Socioeconomic status directly affects the health of individuals, and living in poverty reduces one’s access to healthcare. Compared with American Indian women with a higher socioeconomic status, American Indian women with low socioeconomic statuses were found to have a 292% increase in the incidence of cervical cancer (Eisenberg, Coe, Wilson, Evans, & Brewer, 2010). Many American Indian families have incomes 200% below the poverty level and lack financial resources to pay for healthcare (Lammarino et al., 2012). IHS facilities offer care without charge to individuals who are enrolled in federally recognized tribes; however, individuals may need to travel long distances to IHS facilities. Thus, transportation is another barrier to healthcare for many American Indians (MDH, 2012). Additionally, modern cancer treatment is purchased from other facilities through IHS contract health services, which is not available to all IHS beneficiaries (Cobb et al., 2008). Thus, cancer treatment may be logistically challenging and financially impossible for many American Indians.

Lack of continuity of care and fragmented cancer care are additional identified barriers (Cobb et al., 2008). Not only do American Indian women experience lower rates of cervical cancer screening, but they also are less likely to follow-up with necessary care after cervical cancer screening. According to Eisenberg et al. (2010), lack of follow-up care is primarily associated with problems in the healthcare system that limit patients' access to care. Recognized health system barriers include ineffective patient-provider communication regarding the need to follow-up, inappropriate scheduling of appointments, and prolonged intervals between initial and follow-up appointments.

Healthcare Funding

Because of treaties and various laws, American Indians have a legal birthright to receive healthcare services provided by the federal government (Warne, Kaur, & Perdue, 2012). The main agencies fulfilling the federal government's responsibility to provide healthcare services to American Indians include the Bureau of Indian Affairs and the IHS. Compared to other healthcare systems funded by the federal government, the IHS is significantly underfunded. According to Holm et al. (2010), the IHS operates with only 59% of the necessary resources to provide high-quality care. Per capita healthcare spending by the federal government is twice as high for prisoners compared to healthcare spending for American Indians. Additionally, 90 or fewer healthcare providers are available per 100,000 patients in the IHS, whereas the national average is 229 providers per 100,000 patients.

Inadequate funding of the IHS adversely impacts American Indian people by reducing access to health promotion and disease prevention interventions (Warne et al., 2012). Many American Indian men and women experience challenges in accessing appropriate healthcare providers due to shortages of IHS professionals (Holm et al., 2010). Even when patients are able

to access healthcare providers, they still may not receive preventative testing that needs to be completed outside of an IHS facility, such as mammograms. IHS provides payment for private sector screening, procedures, or diagnostic testing if funding is available; however, contract health services funding does not typically last the entire fiscal year (Warne et al., 2012). Lack of adequate funding for contract health services may lead to restrictions in access to specialty services, such as oncology treatment for women with cervical cancer, which further intensifies health disparities among American Indians.

Theoretical Framework

A model of adult learning that was introduced by Malcolm Knowles in 1973, also known as andragogy, was utilized to guide the development and implementation of the continuing education module to reduce cervical cancer disparities among American Indian women (McGrath, 2009). According to Knowles (as cited in Cercone, 2008), andragogy is “the art and science of helping adults learn” (p. 137). Knowles also acknowledged there are significant differences between how adults and children learn, and a comprehensive understanding of adult learning is essential for educational interventions to be successful (Merriam & Bierema, 2014). The adult learning theory is applicable to the continuing education module because the specific target population includes adult healthcare providers, and the conceptual framework was utilized to meet the unique needs of adult learners. Additionally, the continuing education module was available through an online learning environment, and because online students are predominately adults, “the more one understands the nature of adult learning, the better one can understand the nature of distance learning” (Cercone, 2008, p. 139).

Creation of a successful online education module requires tailoring the intervention to the needs of adult learners, as adult and distance learners have different learning needs compared to

traditional college students (McGrath, 2009). Most adult learners have competing responsibilities that may affect their learning, such as family responsibilities and full-time jobs. Other situations that may also impede learning in the classroom include transportation issues, childcare, and financial limitations (Cercone, 2008). The continuing education module was offered in an online environment to enhance convenience for the target population. Different learning styles were addressed through incorporation of text, audio, and graphics throughout the module to meet the diverse needs of adult learners. Limitations were also considered in the development and design of the online intervention. The module consisted of large, easy to read font with clear instructions on how to navigate through the module. Thus, the education module was learner-centered and met the specific needs of adult learners.

Five principles or assumptions of adult learning are incorporated into Knowles' theory of andragogy and were applied to the development of the continuing education module to create a more beneficial learning experience for the participants (Cercone, 2008). The first assumption of andragogy is that adults are autonomous and independent learners compared to children who are dependent learners. Because adults are self-reliant, they must be able to direct their learning and be actively involved in the learning process. The continuing education module enabled participants to learn independently, as the module was available online and could be completed at the discretion of the participants. Additionally, facilitation of knowledge occurred through providing numerous resources from diverse authors for participants to review based on their interests and identified learning needs. A feedback section was also provided in the post-test to allow participants to self-direct their learning by making recommendations for improvement.

The second assumption of andragogy is that adults accumulate life experiences and knowledge, which can be utilized as a resource for learning (Merriam & Bierema, 2014). Life

experiences make each individual learner unique and play a central role in adults' self-concept. Not only do prior experiences help learners to process new information, but they also foster the necessity of learning. Thus, instruction must be relevant to the past experiences and internal knowledge of learners (Cercione, 2008). Experiential learning was achieved through incorporation of problem-based learning into the educational module, which enabled participants to utilize their accumulated life experiences and knowledge as a resource for learning.

Another assumption in Knowles' theory of adult learning suggests that adults are goal-oriented, and learning readiness is directly associated with the learners' social roles (McGrath, 2009). Because adult learners are goal-oriented, objectives should be reviewed at the beginning of educational interventions (Cercione, 2008). Adult students must be able to recognize a reason for learning new information, as well as identify the connection between new information and their daily life. The continuing education module met the needs of adult learners by reviewing objectives at the beginning of the project. Content included in the module also paralleled the maturity level of adult students, and the students could apply life and work experiences to the learning environment.

The fourth assumption of andragogy is that adults are problem-centered and want to utilize new knowledge immediately (Cercione, 2008). As individuals mature, a change in time perspective occurs from one of future to immediate application of new information. Adult learners must understand their values and what is important to them, as well as the benefits of learning new information and how the new information will help them meet life or career objectives (Merriam & Bierema, 2014). The continuing education module met the fourth assumption of andragogy by making the coursework relevant to the adult learners to better prepare them for their responsibility of providing education and screening to American Indian

women in a culturally competent manner. The participants could also self-reflect on why learning the new information was important to them and how they could apply the knowledge to their life and practice.

The last assumption of andragogy is that adults are internally motivated to learn new information rather than externally motivated (Merriam & Bierema, 2014). Examples of internal motivation for the participants may include increased job satisfaction, improved self-esteem, and enhanced quality of life (Cercone, 2008). Adult learners also want to be respected, and learning is enhanced in safe and comfortable environments. The learning environment of the continuing education module was respectful and collaborative by allowing participants to provide feedback and recommendations for improvement. A safe online environment was created to allow the participants to feel comfortable expressing their opinions of the continuing education module.

Conclusion

In summary, American Indians experience significant health disparities compared to the general United States population. These disparities are likely due to a combination of patient, provider, and health system factors. Striking cervical cancer disparities exist among American Indian women, including a higher prevalence, more rapidly escalating incidence, and poorer survival. In order to reduce or eliminate these disparities, healthcare providers must become knowledgeable about unique risk factors for cervical cancer, barriers to care, and cultural beliefs among American Indian women. Developing an understanding of American Indian culture and collaborating with traditional healers can help in establishing trusting relationships and developing cultural competency. Ultimately, incorporating culturally competent care into all healthcare visits has the potential to improve overall health, enhance quality of life, and reduce existing cervical cancer disparities among American Indian women.

CHAPTER THREE. PROJECT DESCRIPTION

Project Implementation

The practice improvement project was an evidence-based intervention plan based on results of an extensive literature review. Data from numerous research studies indicated the need to develop interventions to reduce cervical cancer disparities among American Indian women (Jim et al., 2012; Schmidt-Grimminger et al., 2011). Preventative efforts to improve knowledge and cervical cancer screening must be implemented through school-based programs and community education, as well as in the clinic and healthcare provider role (Schmidt-Grimminger et al., 2013).

Although healthcare providers have a significant impact on whether patients participate in routine cervical cancer screening, a majority of healthcare providers do not adequately communicate cervical cancer screening recommendations or the value of regular cervical cancer screening (Rogers & Cantu, 2008). According to Jim et al. (2012), 64% of healthcare providers working at IHS, Tribal, and Urban Indian Healthcare Facilities reported they do not regularly review the importance of cervical cancer screening with their patients. Additionally, only 36% of the providers stated they routinely discussed cervical cancer screening recommendations with patients and/or their parents, whereas 26% of the providers reported occasional, rare, or no discussions about the importance of cervical cancer screening with their patients. Healthcare providers identified lack of continuity of care and inadequate understanding of cultural beliefs as barriers to increasing discussions related to cervical cancer screening.

Not only is there a need to increase patient-provider discussions regarding cervical cancer screening, but there is also a need to improve healthcare providers' knowledge of preventative interventions to reduce cervical cancer among American Indian women. One common

misconception among half of surveyed providers working in IHS, Tribal, and Urban Indian Healthcare Facilities was that pregnancy tests are required prior to the HPV vaccination; however, pregnancy tests are not required prior to vaccination (Jim et al., 2012). Tribal and IHS providers were also confused about what age to start HPV vaccinations, as well as when to initiate Pap smears. Another knowledge deficit was identified among healthcare providers working in Tribal clinics related to whether or not men should receive the HPV vaccine (Schmidt-Grimminger et al., 2013).

Findings from the previous studies suggested Tribal and IHS providers may not be incorporating cultural beliefs and discussing cervical cancer screening recommendations during primary care visits with American Indian women (Jim et al., 2012; Schmidt-Grimminger et al., 2013). Based on the evidence, healthcare providers need additional education regarding cervical cancer prevention, so a continuing education module was developed in collaboration with the American Association of Nurse Practitioners to educate nurse practitioners about cervical cancer disparities among American Indian women (Appendix A).

Project Description

The continuing education module was designed with the intended target audience of nurse practitioners who provide primary care to American Indian women. The module consisted of a PowerPoint presentation with graphs, pictures, and written text (Appendix B). The educational module incorporated information related to cervical cancer disparities and cultural beliefs and practices among American Indians. Contributing factors to cervical cancer among the target population were also reviewed, including HPV, chlamydia infection, immunosuppression, early initiation of sexual activity, risky sexual behaviors, tobacco use, diet, and obesity. The education module also included common barriers to healthcare among American Indian women, such as cultural influences, language barriers, mistrust of Western

medicine, education levels, socioeconomic status, healthcare funding, and beliefs regarding cancer screening and HPV vaccination. Interventions for providing culturally competent care to American Indian women were also reviewed in the education module.

A recorded lecture of the information was included in the continuing education module. Additionally, three video clips from an interview with a traditional healer, Mr. Willard Yellow Bird, Jr., were incorporated into the module to illustrate the importance of culture and traditional healing practices in the health of American Indian women (Appendix C). The information and voice-over lecture included in the continuing education module were based on findings from an extensive literature review. The development of the online continuing education module was guided by Knowles' theory of andragogy, and multiple teaching formats were utilized to address the varied learning styles of the adult participants.

Project Development

The need for an interview with a traditional American Indian healer was identified due to the rich influence of culture on health seeking behaviors among American Indian women, as well as healthcare provider reports regarding their limited understanding of American Indian culture and beliefs (Jim et al., 2012). Potential American Indian traditional healers were discovered through attendance of a traditional healer panel held at North Dakota State University on May 2, 2014. Mr. Yellow Bird was one of the speakers at the meeting and was contacted the following week via telephone through his office at the City of Fargo. A meeting was scheduled and held on May 13, 2014 to discuss the project with Mr. Yellow Bird and investigate his interest in participating in the continuing education module. Mr. Yellow Bird expressed interest in the project and agreed to participate in a recorded interview regarding his culture, beliefs, traditional healing practices, and advice for health professionals when caring for American Indian women.

Mr. Yellow Bird was given a \$20 gift certificate and a North Dakota State University coffee mug as an appreciation for devoting his time and expertise in the creation of the module.

The traditional healer interview was held on June 13, 2014 on the North Dakota State University campus and lasted over an hour. Prior to the interview, Mr. Yellow Bird gave verbal consent to be recorded. The interview was recorded with the help of Mr. Scott Swanson, Electronic Media Specialist at North Dakota State University. Following the interview, the recorded video was reviewed, and video clips for the continuing education module were chosen based upon information included in the PowerPoint presentation. The video clips were then cut by Mr. Swanson and converted to a useable format for embedding into a PowerPoint presentation.

The continuing education module was recorded after the script was finalized with the guidance and direction of Information Technology Services at North Dakota State University. Prior to the recording, discussions were held regarding available equipment, appointments for recording, and video file options for saving the completed continuing education module. The voice-over lecture was recorded with the corresponding PowerPoint slides on July 29, 2014 and July 30, 2014. Information Technology Services aided in embedding the video clips and creating a video file type that could be submitted to the AANP CE Center. Additionally, pretest, posttest, and evaluation questions were developed to complement the video component of the continuing education module and were used to measure the participants' change in knowledge related to the project objectives. The pretest, posttest, and evaluation questions will be further discussed in the evaluation section. A comprehensive list of references was also created as a handout to enable the nurse practitioners to engage in independent reading and research based on their interests and learning needs, which is one of the assumptions of Knowles' theory of andragogy.

Project Dissemination

The continuing education module video file and application packet were submitted to the AANP CE Center on August 4, 2014, and the content was approved on August 19, 2014. No revisions or changes to the continuing education module were required prior to the approval. The continuing education module went live on August 26, 2014 and was available online to all members of the American Association of Nurse Practitioners. Additionally, non-members could also access the continuing education module free of charge after creating an account with the American Association of Nurse Practitioners and providing contact information.

An e-mailed invitation for participation in the continuing education module was sent on August 26, 2014 to all nurse practitioners working in primary care at IHS facilities in the United States (Appendix D). The invitation included information related to the estimated time to complete the module and how to access the online continuing education. Nurse practitioners working in IHS facilities were identified through the IHS website, which contains a list of staff members by their occupation and their corresponding e-mail addresses. The e-mailed invitation with the link to the continuing education module was sent to 134 nurse practitioners working in primary care settings at IHS facilities in the United States.

The purpose of the practice improvement project was also to target nurse practitioners caring for American Indian women in North Dakota due to the increased cervical cancer disparities in the Northern Plains. Accordingly, nurse practitioners working at Tribal and IHS facilities in North Dakota were also mailed the invitation to participate in the continuing education module in addition to the e-mail notification (Appendix D). Nurse practitioners working at IHS facilities in North Dakota were identified through the IHS website, and the medical facilities were called to confirm the list of nurse practitioners was accurate. Nurse practitioners working at Tribal facilities in North Dakota were identified through systematic

internet searches. The Tribal clinics were then contacted for a list of nurse practitioners providing primary care services. The mailed invitation to participate with the website for the continuing education module was sent to 13 nurse practitioners working in Tribal and IHS facilities in North Dakota. Additionally, the continuing education module was also distributed to nurse practitioner students enrolled in the Doctor of Nursing Practice program at North Dakota State University. Information was provided on the purpose of the practice improvement project, and directions were provided on how to access the continuing education module.

Online modules are commonly used as a source of continuing education for healthcare providers and can help to meet the unique needs of adult and distance learners, as well as reduce barriers to learning. Because of the lack of funding for IHS facilities, resources and educational materials serve as a barrier for both Tribal and IHS education programs (Anastario et al., 2013). However, the practice improvement project was available online free of charge and was maintained by the investigator. Online education modules have been shown to be effective in providing continuing education to healthcare professionals. Harris, Purnell, Fletcher, and Lindgren (2013) developed an online education program and found the online module successfully prepared health professionals to provide culturally competent care and recognize their own biases. Additionally, continuing education modules available via the internet were found to enhance knowledge, skills, and decision-making among healthcare providers similarly to conventional continuing education approaches (Casebeer et al., 2010).

Institutional Review Board Approval

This practice improvement project was certified as exempt by the North Dakota State University Institutional Review Board on May 9, 2014 (Appendix E). The continuing education module did not involve direct patient contact, and there was minimal risk to the participants

throughout the entirety of the project. Pretest, posttest, demographic, and evaluation data were kept confidential and anonymous, as the AANP CE Center provided data in aggregate form only. The continuing education module was also created in accordance with the AANP CE standards and policies and the AANP commercial support standard.

Data Collection

Pretest and posttest questions were incorporated into the continuing education module, as well as a short evaluation section. Healthcare providers who participated in the practice improvement project completed the pretest questions prior to starting the module. Upon successful completion of the module, healthcare providers finished the posttest. The pretest and posttest consisted of seven multiple choice questions to assess participants' knowledge regarding cultural beliefs, cervical cancer disparities, risk factors, and barriers to care among American Indian women, as well as how often they engaged in discussions about cervical cancer screening with their patients (Appendix F). The evaluation section was available to participants following the posttest and consisted of questions related to demographics and opinions on the overall effectiveness of the online continuing education module in enhancing knowledge and awareness (Appendix G).

The AANP CE Center served at the host site for data collection. The AANP CE Center compiled the data into an aggregate report and shared the data with the investigator on approximately a monthly basis. The initial data report was received on October 9, 2014 and included data from August 26, 2014 to October 7, 2014. The second data report was provided on November 13, 2014 and included the set of data from October 8, 2014 to November 1, 2014. The third set of data was received on December 11, 2014 and contained a comprehensive summary of the results from August 26, 2014 to November 31, 2014.

CHAPTER FOUR. EVALUATION

Evaluation Methods

Evaluation of the continuing education module was measured through pretest and posttest questions to identify the participants' level of awareness and knowledge regarding cervical cancer disparities among American Indian women before the educational intervention compared to after the intervention. Participants completed the pretest and posttest questions online at the AANP CE Center. The AANP CE Center was responsible for compiling and storing the data, as well as providing monthly reports to the investigator in aggregate form. The pretest and posttest questions were developed based upon the learning objectives of the continuing education module (Appendix F). One or more questions were utilized to evaluate each of the four learning objectives. Six of the pretest and posttest questions were related to the content incorporated into the educational module, and one of the questions was related to the participants' planned or potential changes to practice as a result of the continuing education activity. Additionally, demographic information and further evaluation responses were collected following completion of the continuing education module (Appendix G).

While the pretest and posttest questions correlated with the learning objectives of the continuing education module, one question included in the final evaluation was utilized to broadly evaluate the objectives. Upon completion of the continuing education module, participants were asked to what extent the program enhanced their ability to meet all four of the learning objectives. The response options included the following: a) completely, b) very, c) moderately, d) slightly, and e) not at all. The question and responses were utilized to comprehensively evaluate participants' reported achievement of the learning objectives.

The first learning objective was to recognize common cultural health beliefs and traditional practices among American Indians. Approximately 15 minutes of the module incorporated information related to American Indian culture, as well as the effects of historical trauma on the life journey for American Indians. The method of instruction for the first objective included lecture, PowerPoint presentation, and video interview. Two video clips from the interview with Mr. Yellow Bird were incorporated into this section and included information on the importance of traditional healing practices in American Indian culture (Appendix C). The first objective was evaluated through two pretest and posttest questions. The first question was as follows: “All of the following are significant aspects of American Indian culture and healing except.” Response options included a) balance, b) sacred plants and herbs, c) tobacco, d) detoxification methods, and e) all of the following are significant aspects in traditional American Indian culture and healing. The second question used to evaluate this objective was, “Which of the following statements is true regarding aspects of American Indian culture that may interfere with adequate cervical cancer screening and follow-up.” The multiple choice responses included the following: a) American Indian languages do not have a word for cancer, b) discussions of cancer are thought to lead to the development of cancer, c) there is historical mistrust of Western providers among American Indians, d) B & C, and e) all of the above (Table 1).

The second learning objective was to identify the current cervical cancer disparities experienced by American Indian women. Approximately five minutes of the continuing education module addressed healthcare disparities among the American Indian population, as well as the higher cervical cancer incidence rates among American Indian women. The method of instruction for the second objective included lecture and PowerPoint presentation. The second objective was evaluated through one question on the pretest and posttest: “What disparities do

American Indian women experience related to cervical cancer.” The following responses were options to answer the question: a) higher incidence of cervical cancer, b) higher rates of metastasis at diagnosis, c) higher mortality rates, d) all of the above, and e) A & C (Table 1).

The third learning objective for the continuing education module was to state factors contributing to cervical cancer-related health disparities among American Indian women. The third objective was explained through approximately 30 minutes of lecture and PowerPoint presentation regarding the contributing factors to cervical cancer and barriers to healthcare among American Indian women. Two pretest and posttest questions were utilized to evaluate the third objective. The first question was, “Which of the following statements are true in regards to HPV among American Indian women.” The potential answers to the question include the following: a) American Indian women have higher rates of HPV 16 and 18 compared to Caucasian women, b) American Indian women have higher rates of high-risk HPV and different oncogenic types compared to Caucasian women, c) rates of HPV are similar among American Indian and Caucasian women, and d) American Indian women have lower rates of HPV compared to Caucasian women. The second question to evaluate this objective was also a multiple-choice question: “Which of the following is an identified risk factor for cervical cancer experienced by American Indian women.” The response options for the question included a) diethylstilbestrol (DES) use, b) high prevalence of chlamydia, c) long-term use of oral contraceptives, and d) increased use of intrauterine devices (Table 1).

The fourth learning objective was to identify interventions to improve cultural awareness, establish trusting relationships, and reduce cervical cancer disparities among American Indian women. Approximately 12 minutes of the continuing education module incorporated information related to culturally competent interventions, such as offering a bicultural approach

to care, recognizing cultural beliefs and values, avoiding assumptions or stereotypes, and communicating effectively verbally and nonverbally. The method of instruction for the fourth objective included lecture, PowerPoint presentation, and video interview. One video clip from the interview was incorporated into the section. In the video clip, Mr. Yellow Bird provided advice for healthcare providers about caring for American Indian women and discussed the importance of respecting American Indian culture. The fourth objective was broadly assessed through the final evaluation question in which participants were asked about their ability to meet all four of the learning objectives. The fourth objective was also evaluated through a question on the pretest and posttest: “As a result of this activity, how often will you now discuss cervical cancer screening with American Indian women.” The participants were able to respond with one of the following answers: a) routinely, b) often, c) sometimes, and d) never (Table 1).

In addition to the pretest and posttest questions, participants were also asked to provide evaluation data and demographic information. The demographic information collected included which AANP region the participants practice in and the number of years working as a nurse practitioner. Demographic information was also collected related to the percentage of American Indian women the participants see in their practice with the response options of less than 25%, 25-50%, 50-75%, 75-99%, and 100%. A general question incorporated in the final evaluation included, “What serotypes does the quadrivalent HPV vaccine cover.” Participants were also asked how likely they would be to recommend the program to colleagues, how appropriate the format was to promoting learning, and to what extent did the speaker demonstrate expertise and effectiveness in the topic. The response options to the previous three questions included the following: completely, very, moderately, slightly, and not at all. Additionally, participants were asked about behavior change as a result of the continuing education. Response options were as

follows: I will modify my practice, I will seek more information before modifying my practice, and I see no need to modify my practice. The evaluation also included a section for participants to provide comments and suggestions for improvement (Table 2).

Table 1

Continuing Education Module Objectives and Assessment Questions

Question	Response Options	Method of Instruction	Length of Instruction
Objective 1: Recognize common cultural health beliefs and traditional practices among American Indians			
All of the following are significant aspects of traditional American Indian culture and healing except:	<ul style="list-style-type: none"> a. Balance b. Sacred plants and herbs c. Tobacco d. Detoxification methods e. All of the following are significant aspects in traditional American Indian culture and healing 	Lecture, PowerPoint presentation, and video interview	~15 minutes
Which of the following statements is true regarding aspects of American Indian culture that may interfere with adequate cervical cancer screening and follow-up?	<ul style="list-style-type: none"> a. American Indian languages do not have a word for cancer b. Discussions of cancer are thought to lead to the development of cancer c. There is a historical mistrust of Western providers among American Indians d. B & C e. All of the above 		
Objective 2: Identify the current cervical cancer disparities experienced by American Indian women			
What disparities do American Indian women experience related to cervical cancer?	<ul style="list-style-type: none"> a. Higher incidence of cervical cancer b. Higher rates of metastasis at diagnosis c. Higher mortality rates d. All of the above e. A & C 	Lecture and PowerPoint presentation	~5 minutes

Table 1

Continuing Education Module Objectives and Assessment Questions (continued)

Objective 3: State factors contributing to cervical cancer-related health disparities among American Indian women			
Which of the following statements are true in regards to HPV among American Indian women?	<ul style="list-style-type: none"> a. American Indian women have higher rates of HPV 16 and 18 compared to Caucasian women. b. American Indian women have higher rates of high-risk HPV and different oncogenic types compared to Caucasian women. c. Rates of HPV are similar among American Indian and Caucasian women. d. American Indian women have lower rates of HPV compared to Caucasian women. 	Lecture and PowerPoint presentation	~30 minutes
Which of the following is an identified risk factor for cervical cancer experienced by American Indian women?	<ul style="list-style-type: none"> a. Diethylstilbestrol (DES) use b. High prevalence of Chlamydia c. Long-term use of oral contraceptives d. Increased use of intrauterine devices 		
Objective 4: Identify interventions to improve cultural awareness, establish trusting relationships, and reduce cervical cancer disparities among American Indian women			
As a result of this activity, how often will you now discuss cervical cancer screening with American Indian women?	<ul style="list-style-type: none"> a. Routinely b. Often c. Sometimes d. Never 	Lecture, PowerPoint presentation, and video interview	~12 minutes
To what extent will this program enhance your ability to meet the four objectives of the continuing education module?	<ul style="list-style-type: none"> a. Completely b. Very c. Moderately d. Slightly e. Not at all 		

Table 2

Continuing Education Module General Evaluation Questions and Demographic Data

General Evaluation Questions	
What serotypes does the quadrivalent HPV vaccine cover?	a. 6, 11, 16, 31 b. 11, 16, 18, 31 c. 6, 11, 16, 18 d. 11, 18, 31, 42
To what degree did the speaker demonstrate expertise and effectiveness in the topic?	-Completely -Very -Moderately -Slightly -Not at all
How appropriate was the format to promoting learning?	-Completely -Very -Moderately -Slightly -Not at all
How likely would you be to recommend this program to your colleagues?	-Completely -Very -Moderately -Slightly -Not at all
As a result of this educational activity:	-I will modify my practice -I will seek more information before modifying my practice -I see no need to modify my practice
What, if any, recommendations would you like to share for future improvement of this program?	Blank comment box for participant feedback
Approximately what percentage of American Indian women do you see in your practice?	-Less than 25% -25-50% -50-75% -75-99% -100%
How many years have you been a healthcare provider?	-Less than 5 years -5 – 10 years -10 – 20 years -Greater than 20 years
In what area of the country do you primarily practice?	-List of AANP Regions 1-11

CHAPTER FIVE. RESULTS

Presentation of Findings

The AANP CE Center provided reports of the data from the continuing education module on approximately a monthly basis with the data in aggregate form. The initial data report was received on October 9, 2014 and included data from August 26, 2014 to October 7, 2014. The second data report was received on November 13, 2014 and included data from October 8, 2014 to November 1, 2014. A third data report was received on December 11, 2014 and included comprehensive results from August 26, 2014 to November 31, 2014.

The first data report included 102 participants who completed the continuing education module, pretest, posttest, and evaluation questions, with 22 participants receiving certificates in August, 2014 and 82 participants in September, 2014. The second data report included 79 participants who completed the program in the month of October, 2014. The third data report included all participants (N = 203) who completed the continuing education module, with 20 participants receiving certificates in November, 2014. One explanation for the higher response rates during the beginning of the program may be related to the format of the AANP CE Center, as new education modules are advertised at the beginning of the list of continuing education opportunities. The additional marketing of the continuing education module during the first month of the program may have contributed to the differences in monthly responses rates.

The completion rate for the program was approximately 61.8%, as 328 individuals started the continuing education module, and 203 individuals finished the module for continuing education credit. Three months of data were collected from a total of 203 participants (N = 203), and the participants were from various AANP regions across the United States (Table 3). Approximately 72.4% (n = 147) of the participants have practiced as a nurse practitioner for less

than 10 years. A majority of the participants (72.4%; n = 147) reported their clinical practice is comprised of less than 25% of American Indian women, while 5.9% (n = 12) of the participants reported their clinical practice consists of 100% of American Indian women (Table 4).

Table 3

Participant Demographics

Demographic	(%)	(n)
Years of Practice		
< 5 Years of Practice	39.9	81
5 – 10 Years of Practice	32.5	66
10 – 20 Years of Practice	23.2	47
> 20 Years of Practice	4.4	9
AANP Region		
AANP Region 1: Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont	3.4	7
AANP Region 2: New Jersey, New York, Puerto Rico	8.9	18
AANP Region 3: District of Columbia, Delaware, Maryland, Pennsylvania, Virginia, West Virginia	7.4	15
AANP Region 4: Kentucky, North Carolina, South Carolina, Tennessee	19.7	40
AANP Region 5: Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin	16.8	34
AANP Region 6: Arkansas, Louisiana, New Mexico, Oklahoma, Texas	11.8	24
AANP Region 7: Iowa, Kansas, Missouri, Nebraska	6.4	13
AANP Region 8: Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming	7.4	15
AANP Region 9: Arizona, California, Hawaii, Nevada, Pacific U. S. Territories	6.9	14
AANP Region 10: Alaska, Idaho, Oregon, Washington	3.4	7
AANP Region 11: Alabama, Florida, Georgia, Mississippi, Caribbean U. S. Territories	7.4	15
AANP Region: Other	0.5	1

Table 4

Demographics of Participants' Clinical Practice

Percentage of American Indian Women Seen in Participants' Clinical Practice	(%)	(n)
Less than 25%	72.9	148
25-50%	8.4	17
50-75%	11.3	23
75-99%	1.5	3
100%	5.9	12

There was a high level of acceptance regarding the continuing education module among the participants. Approximately 42.6% (n = 86) of the participants reported their ability to meet all four objectives of the continuing education module was completely enhanced by the program, and 40.2% (n = 82) responded their ability to meet the objectives was very enhanced by the program. Nearly half of the participants (48.5%; n = 99) conveyed they will modify their practice as a result of the continuing education module, while 36.3% (n = 74) will seek more information before modifying their practice.

Half of the participants (50.0%; n = 101) believed the speakers completely demonstrated expertise and effectiveness for the topic, and 35.3% (n = 72) reported the speakers were very successful in demonstrating expertise and effectiveness. Ninety-four percent (n = 191) of the participants responded the level of content was “just right” for the experience level of nurse practitioners. A majority of the participants would recommend the program to other health professionals, with 42.6% (n = 86) indicating they were completely likely and 33.8% (n = 69) indicating they were very likely to recommend the program to their colleagues. Additionally, 45.1% (n = 91) of the participants reported the format of the continuing education module was

completely appropriate to promoting learning, and 35.8% (n = 73) of the participants reported the format was very appropriate to promoting learning.

To evaluate the statistical significance of learning related to the continuing education module, a comparison of pretest and posttest answers were analyzed using Chi-square with an alpha set at .05 to assess the null hypothesis that the percentage correct on the pretest is equal to the percentage correct on the posttest. One of the questions included on the pretest and posttest did not correlate with a specific objective but was utilized to evaluate learning related to the content of the continuing education module. Participants were asked, “What serotypes does the quadrivalent HPV vaccine cover.” Prior to completing the continuing education module, 44.4% (n = 90) of the participants answered the question correctly by choosing “6, 11, 16, 18.” Upon completion of the continuing education module, the number of participants who answered correctly increased to 79.0% (n = 160). The increase in participants’ knowledge of serotypes included in the quadrivalent HPV vaccine was statistically significant ($p < .0001$).

Objective One

The first objective was to recognize common cultural health beliefs and traditional practices among American Indians. Before completing the continuing education module, approximately two thirds of the participants (65.2%, n = 132) correctly answered the question, “All of the following are significant aspects of traditional American Indian culture and healing except:” with the response “all of the following are significant aspects in traditional American Indian culture and healing.” The number of participants who were able to successfully identify significant aspects of American Indian culture and healing increased as a result of the continuing education module. Approximately 80.5% (n = 163) of the participants correctly identified

important aspects of American Indian culture and healing after completing the continuing education module, which was statistically significant ($p = .0006$).

The first objective was also measured by an additional question: “Which of the following statements is true regarding aspects of American Indian culture that may interfere with adequate cervical cancer screening and follow-up.” Prior to the continuing education module, 30.7% ($n = 62$) of the participants provided the correct response of “all of the above.” The number of participants who answered this question correctly after the continuing education module more than doubled, with 65.2% ($n = 132$) of the participants providing the correct answer on the posttest. The improvement in posttest scores was statistically significant ($p < .0001$). As a result of the continuing education module, more participants became knowledgeable of American Indian culture, as well as certain beliefs that may interfere with adequate cervical cancer screening and follow-up.

Objective Two

The second objective was to identify the current cervical cancer disparities experienced by American Indian women. The following question was utilized to evaluate the second objective: “What disparities do American Indian women experience related to cervical cancer,” with the correct answer as “all of the above.” Sixty-four percent ($n = 130$) of the participants answered the question correctly prior to starting the continuing education module. Upon completion of the continuing education module, approximately 75.4% ($n = 153$) of the participants provided the correct response to this question. There was a statistically significant ($p = .0130$) increase in the number of participants who became aware of the higher incidence of cervical cancer, higher rates of metastasis at diagnosis, and higher mortality rates among American Indian women as a result of the continuing education module.

Objective Three

The third objective was to state factors contributing to cervical cancer-related health disparities among American Indian women, and two questions were utilized to evaluate this objective. In the first question, participants were asked, “Which of the following statements are true in regards to HPV among American Indian women.” Before the continuing education module, 47.4% (n = 96) of the participants answered the question correctly by choosing the response: “American Indian women have higher rates of high-risk HPV and different oncogenic types compared to Caucasian women.” There was a statistically significant ($p < .0001$) increase in the percentage of correct responses after completion of the continuing education module, with 69.5% (n = 141) of the participants identifying the correct response on the posttest. Due to the continuing education module, the participants’ awareness of the HPV disparities experienced by American Indian women was enhanced.

The following question was also used to measure the third objective: “Which of the following is an identified risk factor for cervical cancer experienced by American Indian women.” Approximately 59.2% (n = 120) of the participants chose the correct response of “high prevalence of chlamydia” prior to starting the continuing education module. The number of participants who were able to correctly recognize risk factors for cervical cancer among American Indian women increased after completing the continuing education module, as 90.1% (n = 183) of the participants answered the question correctly on the posttest. The improvement in the posttest scores was statistically significant ($p < .0001$), which demonstrates more participants became knowledgeable about the unique risk factors contributing to cervical cancer disparities among American Indian women.

Objective Four

The fourth objective was to identify interventions to improve cultural awareness, establish trusting relationships, and reduce cervical cancer disparities among American Indian women. The fourth objective was evaluated by two questions. The participants' report of their ability to meet the four objectives of the continuing education module was utilized to evaluate achievement of the fourth objective. As previously discussed, the majority of the participants (82.8%; n = 168) reported their ability to meet all four objectives was completely or very enhanced as a result of the continuing education module.

The fourth objective was evaluated by assessing participants' plans to discuss cervical cancer screening with American Indian women before and after the continuing education module (Figure 1). Prior to starting the continuing education module, participants were asked, "How often do you discuss cervical cancer screening with American Indian women?" Twenty-four percent (n = 49) of the participants reported they routinely discuss cervical cancer screening with American Indian women, and 10.4% (n = 21) reported they often discuss cervical cancer screening recommendations with American Indian women. After completing the continuing education module, participants were then asked, "As a result of this activity, how often will you now discuss cervical cancer screening with American Indian women." A majority of the participants reported they would routinely (47.5%; n = 96) or often (24.0%; n = 49) discuss cervical cancer screening with American Indian women as a result of the continuing education module. The participants' reported plans to increase discussions of cervical cancer screening recommendations with American Indian women represent one strategy to potentially reduce cervical cancer disparities among the population, which was the focus of the fourth objective.

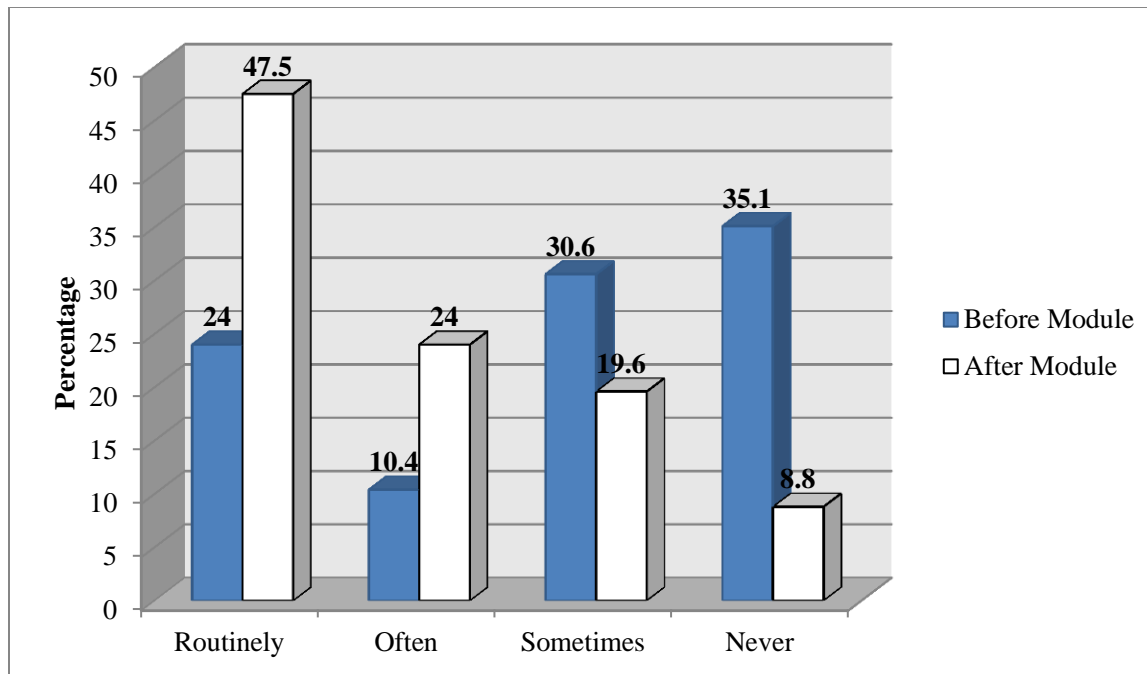


Figure 1. Participant discussions of cervical cancer screening with American Indian women.

Qualitative Data

The written qualitative responses provided additional information, including participants' opinions regarding the effectiveness of the continuing education module, recommendations for future continuing education topics, and suggestions for improvement. Out of the 203 participants, 47 individuals provided further feedback regarding the continuing education module through written responses. Thirty-two of the participants left comments stating the module was good, great, excellent, enjoyable, helpful, interesting, informative, or thorough. Additionally, six of these participants also left comments that they would incorporate the information into their practice and increase discussions about cervical cancer screening with American Indian women. Examples of some of the responses include the following: "I found this to be very helpful in understanding the difference in culture and how it can impact health;" "Interesting topic, one in which I needed more education;" and "Excellent, thorough, and very interesting program

regarding the American Indian population and cervical cancer.” Another participant commented, “Among the dozens of CE activities I have done this year, this is the one I have enjoyed the most, and the one that has taught me the most. I am grateful for the very comprehensive information provided in such an easy to understand way.”

Eleven participants also provided suggestions for future continuing education topics for the AANP CE Center, which included pediatrics, electronic medical record, hepatitis C, ovarian cancer, teen depression, HIV, autism, chronic fatigue, culturally competent care, and addressing disparities among Native Alaskan, Asian American, and African American populations. Two participants reported experiencing technical problems related to the voice-over stopping at various times throughout the continuing education module. Another two participants offered suggestions for improving the continuing education module, such as adding inflection during the presentation and presenting the continuing education activity as a PowerPoint to read at one’s own pace.

CHAPTER SIX. DISCUSSION AND RECOMMENDATIONS

Interpretation of Results

The participants reported a high level of satisfaction with content and presentation of the continuing education module. As previously discussed in the fifth chapter, 80.8% (n = 164) of the participants believed the format of the continuing education module was completely or very conducive to the promotion of learning. Most of the participants (82.8%; n = 168) also reported their ability to meet all four of the formerly detailed objectives was completely or very enhanced as a result of the continuing education module. Many of the participants (85.3%; n = 173) reported the speaker demonstrated expertise and effectiveness related to the topic, and 76.4% (n = 155) of the participants also believed they were completely or very likely to recommend the program to their colleagues. Additionally, almost half of the participants (48.5%; n = 99) planned to modify their practice based on information from the continuing education module.

Previous literature revealed significant gaps in knowledge exist among healthcare providers related to the identification and understanding of the cervical cancer disparities experienced by American Indian women (Jim et al., 2012; Schmidt-Grimminger et al., 2011). Therefore, it is not surprising that the participants scored relatively low on the pretest, with the number of correct responses ranging from 30% to 65% on the six content-related questions prior to starting the continuing education module. Participants scored the lowest on a question related to aspects of American Indian culture that may interfere with adequate cervical cancer screening. Only 30.7% (n = 62) of the participants chose the correct answer prior to the continuing education module; however, the number of participants who correctly identified aspects of American Indian culture that may interfere with adequate cervical cancer screening more than doubled (65.2%; n = 132) after completing the program. Similarly, the percentages of correct

answers increased in the other five pretest and posttest questions as well. The increase in correct answers on the six posttest questions ranged from approximately 11% to 35%, and these results reveal that learning occurred because of the continuing education module.

The findings from this practice improvement project are similar to findings from other studies regarding discussions about cervical cancer screening with American Indian women. Jim et al. (2010) found 36% of providers reported routine discussions related to cervical cancer screening recommendations with American Indian women, while Pandhi et al. (2010) found the percentage of routine cancer screening discussions to be 29%. As previously detailed in the fifth chapter, approximately 24.0% (n = 49) of the participants in this practice improvement project reported routine discussions related to cervical cancer screening recommendations with American Indian women prior to the continuing education module. Upon completion of the continuing education module, the number of participants who plan to engage in routine cervical cancer screening discussions with American Indian women increased considerably (47.5%; n = 96). Overall, the participants provided positive feedback regarding the program, and the results demonstrate the participants' knowledge increased as a result of the continuing education module.

Limitations

The practice improvement project is associated with a number of limitations. First, the AANP CE Center grouped demographic location data into 11 different regions and was unable to provide more detailed information regarding participants' geographic location. Thus, one cannot determine how many participants were from each state. Because cervical cancer disparities are significantly higher among American Indian women living in the Northern Plains, letters were mailed to nurse practitioners working at Tribal and IHS facilities in North Dakota. Knowing

how many participants were from North Dakota rather than from AANP Region Eight would have provided important information. Approximately 7.4% (n = 15) of the participants were from this region, which includes Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming. While it is important for all healthcare providers to recognize cervical cancer disparities among American Indian women, nurse practitioners working in North Dakota were additionally targeted for the practice improvement project. Unfortunately, one cannot determine how many of the 15 participants in Region 8 were from North Dakota. Ultimately, having a breakdown of the participants from each state would have been helpful for interpreting the results and making future recommendations.

A second limitation of the practice improvement project is that the data was provided by the AANP CE Center in aggregate form only for confidentiality purposes. While this allowed for a comprehensive analysis of the results, individual participant data may have provided a further opportunity to analyze and summarize the results. Individual participant data would have enabled the investigator to identify if knowledge gaps exist among nurse practitioners working in a specific geographic location, as well as if knowledge gaps are related to the number of years practicing as a nurse practitioner or the proportion of American Indian women in the participants' clinical practice. Additionally, the aggregate data did not allow the investigator to determine how many participants were from North Dakota or if the participants were students or nurse practitioners.

While the AANP CE Center was an effective platform for the continuing education module, the practice improvement project was limited by the format for the pretest, posttest, and evaluation questions on the AANP CE Center. The number of questions that could be included in the pretest, posttest, and evaluation questions was restricted by the AANP CE Center.

Additionally, the format did not allow for a comment section on the pretest or posttest and allowed for only one comment section on the final evaluation. The comment section was on the first page of the final evaluation. On a following page in the evaluation, participants were asked if they planned to change their practice in a multiple choice question and if so, what changes they planned to make. In order to provide information on the planned changes, the participants were required to go back to the beginning of the evaluation to make additional comments. More flexibility in the format of the AANP CE Center may have allowed for further participant feedback.

Two participants reported they experienced technical problems with the continuing education module stopping or freezing at various times, which could be considered another limitation of the practice improvement project. The technical difficulties may be related to the size of the continuing education module, as the video was slightly over one gigabyte. The large size of the video did require time to download, and the download time likely varied based upon internet speed, browser selection, and computer specifications. Additionally, the AANP CE Center is not compatible with Internet Explorer®, as continuing education modules often do not open or take an extended period of time to download when using the Internet Explorer® browser. This technical problem was conveyed in the invitation for participation (Appendix D); however, participants may have overlooked the information or not received the invitation. Only 2 of the 203 total participants reported technical difficulties related to the continuing education module, so this is a small limitation that is outweighed by the benefits of an online continuing education module available to all nurse practitioners throughout the United States.

A fifth limitation of the practice improvement project is related to the reported demographics of the participants' clinical practice. About three fourths of the participants

(72.9%; n = 148) reported less than 25% of their clinical practice includes American Indian women. One participant provided a written response, “I do not have any American Indian patients at this time.” While it is important for all nurse practitioners to be aware of cervical cancer disparities among American Indian women, it is especially important for nurse practitioners working with American Indian women on a daily basis. Additionally, the results may have been different if the sample included a larger number of nurse practitioners who care for American Indian women in their daily practice, such as those working at IHS facilities.

Recommendations

Because of the positive results and learning that occurred as a result of the continuing education module, it is practical to recommend all healthcare professionals participate in continuing education activities concerned with the population, especially health providers caring for American Indian women. The continuing education module is available on the AANP CE Center, which targets nurse practitioners and nurse practitioner students. Other healthcare providers have the opportunity to complete continuing education modules on the AANP CE Center; however, the number of non-nurse practitioner providers who completed the program is likely low due to the continuing education opportunities offered by their respective professional organizations. Thus, another recommendation is to enhance the marketing and promotion of the continuing education module to other health professionals, including physicians and physician assistants.

Although data will no longer be collected from the continuing education module per the investigator’s recommendations, the program will be available on the AANP CE Center for two years until August, 2016. The continuing education module is available free of charge for AANP members, as well as non-members. Therefore, it is reasonable to recommend

incorporating the continuing education module into the curricula for family nurse practitioners. For example, graduate schools could recommend their students to complete the module as evidence in meeting the foundational outcome competencies, such as providing culturally competent care, advocating for social justice, and evaluating healthcare delivery models to meet current and future needs of specific populations. The module could be incorporated into the curricula as a component of a health promotion class or as an addition to clinical rotations.

Feedback regarding the continuing education module was positive with numerous participants requesting more continuing education activities related to cervical cancer disparities among American Indian women. One participant commented, “I feel there is a need for more education in the primary care setting.” Other participants requested additional continuing education activities related to culturally competent care and would like to hear more traditional American Indian healers discuss their culture and healing practices. Based on the reported interest in American Indian health and culture, it is practical to recommend that the AANP CE Center collaborate with AANP members in developing additional continuing education activities related to this important topic.

Another logical recommendation for collaboration is to partner with the IHS Office of Continuing Education (OSE). Healthcare providers working in IHS facilities have an opportunity to greatly impact health outcomes for American Indians, so it is extremely important for them to recognize the influence of cultural beliefs, as well as risk factors and barriers to care among the population. The module could be featured on the IHS Continuing Education website, which may help to better meet the educational needs of health professionals caring for American Indian women.

Implications for Practice

The practice improvement project influenced a considerable number of nurse practitioners with 203 total participants, and the investigator disseminated the continuing education module by mailing participation invitations to nurse practitioners working at IHS facilities and sending instructions for accessing the module via e-mail to nurse practitioner students at North Dakota State University. The project is important in that it adds to the available literature documenting knowledge gaps among healthcare providers related to the identification and understanding of health disparities among American Indians. Reducing the disparities experienced by this population requires enhanced awareness of the inequalities in health status among American Indians, as well as the provision of culturally competent care. Providing culturally competent care not only has the potential to reduce health disparities, but it also may improve therapeutic patient-provider relationships, patient satisfaction, and quality of care.

Healthcare providers working in the primary care setting will undoubtedly care for individuals across the lifespan with different racial and ethnic backgrounds. To meet the needs of diverse populations, healthcare providers must possess the attitudes, knowledge, and skills necessary to deliver high-quality care to patients, families, and communities. American Indian patients represent one demographic group with specific healthcare needs and unique historical, cultural, lingual, social, and economic characteristics; however, information about caring for American Indian patients may not normally be incorporated into continuing education programs or graduate curricula. Completing educational programs specific to American Indian patients may enable healthcare providers to deliver enhanced, patient-centered care to the population. Improved knowledge and awareness of cultural beliefs, risk factors, and barriers to care among

the population has the potential to improve health outcomes and quality of life for American Indians.

Another implication for practice is related to the recent Food and Drug Administration (FDA) approval of Gardasil[®] 9 in December, 2014 (Monthly Prescribing Reference, 2014). Gardasil[®] 9 is a vaccine administered for the prevention of genital warts and vulvar, vaginal, anal, and cervical cancers. Gardasil[®] 9 protects against five additional HPV serotypes compared to the quadrivalent vaccine and includes HPV serotypes 6, 11, 16, 18, 31, 33, 45, 52, and 58. Because American Indian women have different oncogenic types of HPV that are not covered by the previous quadrivalent vaccine, utilizing the Gardasil[®] 9 vaccination with the population is imperative in reducing rates of HPV and cervical cancer. Increased vaccination with Gardasil[®] 9 along with enhanced awareness of cervical cancer disparities has the potential to reduce cervical cancer-related morbidity and mortality among American Indian women.

The HPV vaccination is also indicated for males between the ages of 9 and 26 years to prevent anogenital condylomata acuminata, as well as penile, anal, and oropharyngeal cancers (Schmidt-Grimminger et al., 2013). Unfortunately, HPV vaccination rates among males in the United States are very low with only approximately 8.3% of adolescent males receiving one or more doses of the HPV vaccination in 2011 (Reiter, Gilkey, & Brewer, 2013). Thus, an implication for practice is to increase HPV vaccination rates among adolescent and young adult males. Healthcare providers have an opportunity to increase vaccination rates among males by making recommendations to patients and parents and providing further education regarding the importance of the vaccine.

Implications for Future Research

The need for further education among healthcare providers regarding the American Indian population and culture is confirmed by the survey findings from the practice improvement project. Continuing education modules could be developed to further examine barriers to healthcare and contributing factors to cervical cancer disparities among American Indian women. One participant suggested that common conditions leading to immunocompetence among American Indian women should be comprehensively discussed, including type II diabetes mellitus, chronic kidney disease, alcoholism, and drug abuse. Future research aimed at identifying facilitators and barriers to implementing culturally competent care may also be beneficial. Additionally, future research could include partnering with traditional American Indian healers to provide more information and strategies about providing culturally competent care and establishing trusting relationships with American Indian patients.

The recent FDA approval of Gardasil[®] 9 also has implications for research. Future research examining the effect of Gardasil[®] 9 on HPV infections and cervical cancer rates among American Indian women could provide invaluable information with the potential to significantly influence clinical practice recommendations. Additional research could also focus on other health disparities experienced by American Indians, as well as contributing factors and barriers.

Application to Other Nurse Practitioner Roles

Healthcare disparities among racial and ethnic minorities, as well as other vulnerable populations, have been well documented. Nurse practitioners working in a primary care setting often serve as the first point of contact with the Western health system and provide care to a diverse group of patients with different racial and ethnic backgrounds, including the American Indian population. Understanding that the current health disparities experienced by the

population are related to a history of oppression and cultural influences may enable nurse practitioners working in any setting to provide high-quality, patient-centered care to American Indian patients.

Eliminating healthcare disparities is a goal of *Healthy People 2020* and a responsibility for all healthcare providers. Recognizing cervical cancer disparities and contributing factors among American Indian women may help nurse practitioners to counsel high-risk patients about the disease and encourage healthy lifestyle behaviors. Nurse practitioners working in any setting have the opportunity to educate American Indian women about the importance of cervical cancer screenings and encourage annual clinic visits with a primary care provider, which may reduce healthcare barriers and improve continuity of care. Ultimately, providing culturally competent may enable nurse practitioners to better meet the unique healthcare needs of American Indian women and reduce the burden of cervical cancer experienced by the population.

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APPENDIX A. AANP APPROVAL LETTER



The Voice of the Nurse Practitioner®

August 28, 2014
Allison Peltier
DNP Student

Dear Allison,

The continuing education activity *Addressing Cervical Cancer Disparities Among American Indian Women* sponsored by Allison Peltier, DNP Student is approved for continuing education by the American Association of Nurse Practitioners.

All sessions included in this application are approved as submitted. Use the following statement in your literature to indicate the maximum credit one person can obtain upon completion of this activity.

“This program is approved for 1.25 contact hour(s) of continuing education by the American Association of Nurse Practitioners. Program ID 1408353 This program was planned in accordance with AANP CE Standards and Policies and AANP Commercial Support Standards.”

ID number 1408353 has been assigned to this application. Please refer to this number with all communication pertaining to this application including the required post-program reports. This program has been approved for 2 years (through August 26, 2016), provided no changes are made. Participation records and evaluation summaries will be maintained in the AANP CE Center.

Thank you,

A handwritten signature in black ink that reads "Stormy Causey". The signature is written in a cursive style with a long, sweeping underline.

Stormy Causey
CE Coordinator

APPENDIX B. CONTINUING EDUCATION MODULE HANDOUT

Addressing Cervical Cancer Disparities among American Indian Women

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North Dakota State University
Doctor of Nursing Practice Student

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Details

- ❖ This education module will take approximately one hour to complete.
- ❖ Prior to starting the education module, there are 10 pretest questions that need to be completed. Following completion, there is a short posttest and evaluation.
- ❖ This education module is intended for any healthcare provider who cares for American Indian women.
- ❖ This education module reviews cervical cancer disparities experienced by American Indian women.

Disclosure

- ❖ This education module is part of a Doctor of Nursing Practice Clinical Dissertation Project.
- ❖ Grant funding was not received to assist in the development of this education module.

Accreditation Statement

- ❖ This program will be submitted to the American Academy of Nurse Practitioners. This program was planned in accordance with AANP CE Standards and Policies and AANP Commercial Support Standard.

Learning Objectives

- 1) Recognize common cultural health beliefs and traditional practices among American Indians
- 2) Identify the current cervical cancer disparities experienced by American Indian women
- 3) State at least three factors contributing to cervical cancer-related health disparities among American Indian women
- 4) Identify interventions to improve cultural awareness, establish trusting relationships, and reduce cervical cancer disparities among American Indian women

American Indian Demographics



- ❖ 1.6% of the population of the United States
- ❖ More than 565 federally recognized tribes
- ❖ Unique social, political, cultural, and spiritual beliefs and customs

(Hernandez, 2011)

American Indian Culture


- ◆ **Values of American Indian Communities**
 - ◆ Fortitude
 - ◆ Honor
 - ◆ Wisdom
 - ◆ Respect
 - ◆ Courage
 - ◆ Humility
 - ◆ Generosity
- ◆ **Characteristics of many American Indian Communities**
 - ◆ Close family relationships
 - ◆ Community support
 - ◆ Strong spiritual beliefs
 - ◆ Holistic problem-solving

(OT Rogers, 2012; Edgewood et al., 2010; Means, 2007)

Health and Balance

- ◆ Everything on earth is interconnected
- ◆ Health occurs through living a balanced life
- ◆ Medicine Wheel is a symbol for traditional balance
- ◆ Illness occurs by living an unbalanced or immoral lifestyle

Medicine Wheel



(American Cancer Society, 2015; Horowitz, 2012; Means, 2007)

Video Clip 1

Traditional Healing


- ◆ **Holistic Approach**
- ◆ **Ceremonies**
 - ◆ Sweet Lodges
 - ◆ Smudging
 - ◆ Talking Circles
 - ◆ Healing Ceremonies
- ◆ **Sacred Plants and Herbs**
 - ◆ Sage
 - ◆ Cedar
 - ◆ Sweet Grass
 - ◆ Tobacco



(Horowitz, 2012; Sykes & DeBruin-Piles, 2009)

Video Clip 2

Stages of the Life Journey

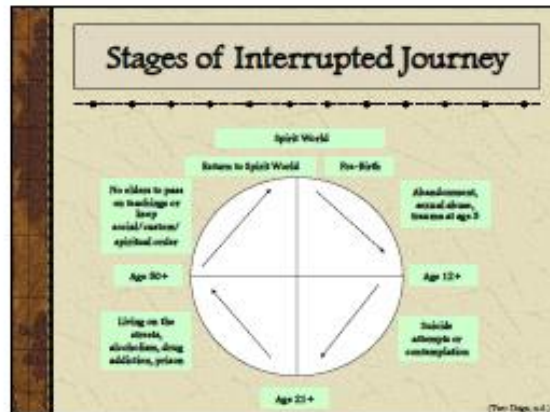


(The Stage, n.d.)

Historical Trauma

- ❖ **Federal Indian Policy**
 - ❖ Indian Removal Era, 1830-1850
 - ❖ Reservation Era, 1850-1886
 - ❖ Allotment and Assimilation Era, 1887-1933
 - ❖ Termination and Relocation, 1945-1961
- ❖ **Boarding School Period, 1879-1935**
 - ❖ Significantly altered family systems
- ❖ **Religious Crimes Code, 1883**
 - ❖ Restricted religious freedom
 - ❖ Prevented practicing of traditional ceremonies
- ❖ **Wounded Knee Massacre, 1890**

(OT Diagon, 2012, Ther Diagon, n.d.)



“American Indians in the United States are dying in large numbers from diseases they shouldn’t have to die from.”

-Roger Dale Walker, MD
Prior President of the Association
of American Indian Physicians

(Stuenkel, 2011)

Cultural Health Disparities

- ❖ **What is a health disparity?**
 - ❖ A condition of being unequal
- ❖ **Contributing Factors**
 - ❖ Poverty/Socioeconomic status
 - ❖ Inadequate access to healthcare
 - ❖ Cultural/linguistic barriers
 - ❖ Knowledge deficits/Education inequalities
 - ❖ Individual and behavioral factors

(Hahn, Vigilante-Hahn, Peltz, & McCreel, 2010)

Cancer Disparities

- ❖ Lower rates of cancer screening among American Indians
- ❖ Higher incidence of certain cancers compared to non-Hispanic whites
 - ❖ Kidney
 - ❖ Stomach
 - ❖ Liver
 - ❖ Cervix
 - ❖ Colon
 - ❖ Gallbladder
- ❖ Cancer is the second-leading cause of death among American Indians over the age of 45



(American Indian Cancer Foundation, 2014; Lammert, Alford, & Rankin, 2012)

Cervical Cancer Disparities

- ❖ **Third leading cancer among women worldwide**
- ❖ **Incidence rates**
 - ❖ American Indian: 11.3 cases per 100,000 people
 - ❖ Caucasian: 7.8 cases per 100,000 people
- ❖ **50% of AI women present in advanced stages**
- ❖ **Mortality rates:**
 - ❖ AI women: 4.3 cases per 100,000 people
 - ❖ Caucasian: 2.3 cases per 100,000 people

(Chen & Chinnappa, n.d., 2011; Powell, Chakrapani, Wang, & Collins, 2011)

Cervical Cancer

- ❖ **Contributing Factors**
- ❖ Human papillomavirus (HPV)
- ❖ Chlamydia
- ❖ Immunosuppression
- ❖ High-risk sexual behaviors
- ❖ Early onset of sexual activity
- ❖ Tobacco Use
- ❖ Diet
- ❖ Obesity

(American Cancer Society, 2015; Ghosh et al., 2008)

Human papillomavirus

- ❖ **Low-risk HPV**
 - ❖ HPV 6 and 8
- ❖ **High-risk HPV**
 - ❖ HPV 16 and 18
- ❖ **Higher overall prevalence of high-risk HPV among American Indian women**
 - ❖ 29% of American Indian women compared to 19% of the general US population
 - ❖ Northern Plains – 42% of American Indian women compared to 25% of Caucasian women
 - ❖ More likely to have multiple HPV infections with oncogenic types of HPV that are not covered by the vaccine

(Alford et al., 2011; Schmitt-Obermayer et al., 2011; Deane et al., 2007)

Human Papillomavirus

(Munshi-Chinnappa et al., 2011)

Chlamydia

- ❖ **Alters cervical cells and provides target cells for HPV infection**
- ❖ **Large disparity among American Indian women**
 - ❖ American Indian women: 816.2 cases per 100,000 people
 - ❖ United States: 409.2 cases per 100,000 people

(Centers for Disease Control and Prevention [CDC], 2012; De et al., 2010; Galloway et al., 2003)

Immunosuppression

- ❖ **Dramatic increases in HIV infection rate among American Indian population**
- ❖ **AIDS incidence rates among American Indian women are approximately three times higher compared to non-Hispanic white women**
- ❖ **Risk factors**
 - ❖ IV drug use
 - ❖ Application of tattoos with contaminated needles
 - ❖ High-risk sexual behaviors
 - ❖ Lack of protection during sexual intercourse
 - ❖ Intimate partner violence

(CDC, 2014; Office of Minority Health [OMH], 2013; Deane, 2008)

High-Risk Sexual Behaviors

- ❖ **American Indian adolescents have a higher prevalence of risky sexual behaviors**
 - ❖ Unprotected sexual intercourse
 - ❖ Multiple sexual partners

Source: Youth Risk Behavior Survey, Year 9 results. © Center for Disease Control

(Kawachi, 2002; & Peltzer, 2011; Office of Minority Health [OMH], 2009; Edwards, Park, Clarke, Taitel, & Peltzer, 2006)

Early Onset of Sexual Behavior

- ❖ **Early initiation of sexual behavior increases one's risk of cervical cancer**
 - ❖ Immature cervix is more susceptible to HPV infections
 - ❖ Persistent HPV infections may progress to cervical cancer
 - ❖ Higher risk of invasive cervical cancer
- ❖ **American Indian adolescents are three times more likely to engage in sexual intercourse before the age of 13**
 - ❖ Family dysfunction
 - ❖ Substance abuse
 - ❖ Low self-esteem
 - ❖ Peer pressure
 - ❖ Stressful life events

(Thakura, Chavis, Kennedy, & McDaniel, 2010; Pezzullo & Laska, 2008; Robinson et al., 2008)

Tobacco Use

- ❖ **Smoking doubles the risk of developing cervical cancer**
 - ❖ Tobacco byproducts damage cervical cell DNA
 - ❖ Alter immune system response to HPV
- ❖ **Tobacco is an important aspect of American Indian culture**
 - ❖ Medicinal and spiritual properties
 - ❖ Misconceptions exist related to recreational tobacco use
- ❖ **Disparities exist among American Indians related to tobacco use**
 - ❖ Overall prevalence: 21.8%
 - ❖ American Indian women in the Northern Plains: 57.7%

(CZC, 2014; Fomina-Mitchell, 2011; Wilson et al., 2011)

Diet

- ❖ **Inadequate daily intake of fruits and vegetables is associated with an increased risk of cervical cancer**
- ❖ **American Indians are more likely to have poor diets with a high fat content and inadequate servings of fruit and vegetables**
 - ❖ Poverty or low income
 - ❖ Commodity foods
 - ❖ Limited access to quality fruits and vegetables
 - ❖ Geographic location
 - ❖ Seasonal variation

(Ray et al., 2012; Roberts & Mowatt, 2012; Noto et al., 2010)

Obesity

- ❖ **Overweight women have a higher risk of developing adenocarcinoma of the cervix**
- ❖ **American Indians are more likely to be obese compared to non-Hispanic whites**
 - ❖ Prevalence of adult women who are overweight or obese
 - ❖ American Indian: 65.1%
 - ❖ Non-Hispanic White: 56.1%
 - ❖ Transition from traditional subsistence lifestyle to more sedentary lifestyle
 - ❖ Prevalence of physical inactivity among adults in the United States
 - ❖ American Indian: 51.4%
 - ❖ Non-Hispanic White: 44.1%

(American Cancer Society, 2013; CMAA, 2013; Ray et al., 2012)

Barriers to Healthcare

- ❖ Cultural Beliefs
- ❖ Language
- ❖ Mistrust of Healthcare Providers
- ❖ Provider Ineffectiveness
- ❖ Lack of Culturally Competent Health Education
- ❖ Education
- ❖ Inadequate Healthcare Utilization
 - ❖ Cancer Screening
 - ❖ HPV Vaccination
- ❖ Access to Healthcare
- ❖ Healthcare Funding



(CMAA, 2013; Lammiman et al., 2011; Sabatelli-Osteberg et al., 2011)

Culture and Language

- ❖ **Cultural Beliefs**
 - ❖ Discussions of cancer may lead to the development of cancer
 - ❖ Cancer viewed as punishment
 - ❖ Cancer screening is associated with negative information
 - ❖ Modesty
 - ❖ Present-day Orientation
- ❖ **Language**
 - ❖ Storytelling plays a role in healing
 - ❖ No direct English translation of the word cancer
 - ❖ Women who speak only American Indian languages are less likely to have a Pap test within the last three years

(Lammiman et al., 2011; Nelson, Chavis, & Eversley, 2012; Chalaguri et al., 2008; Robinson et al., 2008; Kuhl et al., 2011)

Mistrust of the Healthcare System

- ◆ **Traditional Healing**
 - ◆ Physical relief
 - ◆ Enhanced well-being
 - ◆ Sense of empowerment
- ◆ **Mistrust of Healthcare Providers**
 - ◆ History of deliberate infection
 - ◆ Fear of breach of confidentiality
 - ◆ Discrimination



(Hornick, 2012; Peters et al., 2011; Chakrapani et al., 2009)

Provider Effectiveness

- ◆ **Knowledge regarding effective cultural communication and environmental influences**
 - ◆ Cultural Communication
 - ◆ Speech
 - ◆ Nonverbal communication
 - ◆ Nonadherence of personal information
 - ◆ Environmental Stressors
 - ◆ Verbal, physical, or sexual abuse
 - ◆ Historical trauma
- ◆ **Knowledge regarding health disparities**
 - ◆ Abnormal Pap Smears
 - ◆ HPV

(Anderson, Frazier, & Reid, 2011; Schmidt-Chenevigne et al., 2011; Hornick, 2012; Chakrapani et al., 2009)

Education

- ◆ **Culturally Competent Health Education**

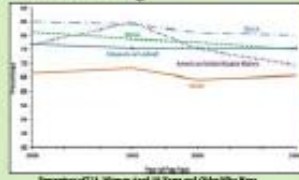
American Indian	Western Society
Interdependent Learning	Independent Learning
Social Support	Autonomy
Trusting Relationships	Individualism
Informal Education	Formal Education and Testing

- ◆ **Differences in Educational Attainment**
 - ◆ Limited health literacy

(Flynn et al., 2013; Chakrapani et al., 2009)

Cancer Screening

- ◆ **Cancer screening is much lower among American Indians**
 - ◆ Mortality rates up to 80% for cancers with effective screening tests
- ◆ **Cervical Cancer Screening**



(CDC, 2010; Peters et al., 2011; Pauly, Chakrapani, Gardner, Peters, & Smith, 2012)

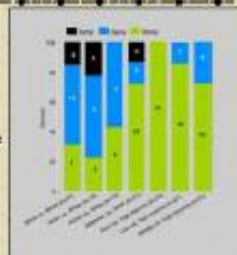
HPV Vaccination

- ◆ **Low HPV Vaccination Rates**
 - ◆ 56% of American Indian adolescents received complete HPV schedule
 - ◆ Low follow-up for subsequent doses
- ◆ **Misconceptions among American Indians**
 - ◆ Vaccination will cause cancer
 - ◆ Cervical cancer is genetic or hereditary
 - ◆ HPV vaccines do not work effectively with their population
 - ◆ Vaccine is too new
 - ◆ Vaccine will promote sexual activity

(Schmidt-Chenevigne et al., 2011; Scott et al., 2012; Alford et al., 2011)

Access to Healthcare

- ◆ **National Health Disparities Report**
 - ◆ Unequal access to care is increasing
- ◆ **Factors affecting access to care among American Indian women**
 - ◆ Socioeconomic status
 - ◆ Poverty
 - ◆ Lack of insurance
 - ◆ Transportation
 - ◆ Child care needs
 - ◆ Clinic hours



(Agency for Healthcare Research and Quality (AHRQ), 2010)

Healthcare System

- ❖ **Indian Health Service (IHS)**
 - ❖ Legal birthright
 - ❖ Comprehensive and culturally acceptable health services
- ❖ **Challenges with IHS**
 - ❖ Chronically underfunded
 - ❖ Specialty services
 - ❖ Healthcare provider shortages
 - ❖ IHS: 907/100,000 patients
 - ❖ Nation Average: 237/100,000 patients

Legal Basis for Federal Services to American Indians and Alaska Natives

- Indian Self-Determination Act of 1975
- Indian Health Care Improvement Act of 1976
- Indian Health Care Reform Act of 1991
- Indian Health Care Reform Act of 1992
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- Indian Health Care Reform Act of 2024
- Indian Health Care Reform Act of 2025

O'Brien, Kass, & Peltier, 2010; Hahn et al., 2010

Cultural Competency

“Cultural competency is one of the main ingredients in closing the disparities gap in health care.”

- Office of Minority Health



O'Mara, 2011

Cultural Considerations

- ❖ **Enhance Self-Awareness**
 - ❖ Assess personal cultural values, beliefs, and attitudes
 - ❖ Avoid conscious or unconscious bias
- ❖ **Avoid Assumptions or Stereotypes**
 - ❖ Cultural diversity among individuals, tribes, and regions
 - ❖ Health disparities vary among various tribes and geographic locations
- ❖ **Recognize the Role of Historical Trauma**
 - ❖ Unresolved historical grief leads to health disparities
- ❖ **Understand Cultural Beliefs and Values**
 - ❖ Culture greatly influences the meaning of health and disease, as well as the chosen healing approach

MARRAS & DRENN, 2008

Video Clip 3

Cultural Considerations

- ❖ **Establish Trusting Relationships**
 - ❖ Participate in community activities
 - ❖ Minimize formality
 - ❖ Learn about patients' lives, beliefs, and culture
 - ❖ Postpone personal questions until trust is established
 - ❖ Involve patients in all health care decisions
- ❖ **Create Empowerment Narratives**
 - ❖ Focus on strengths
 - ❖ Resiliency through years of adversity
 - ❖ Strong identification with culture, family, and community
 - ❖ Traditional practices to strengthen or heal the community



MARRAS & DRENN, 2008

Cultural Considerations

- ❖ **Communication**
 - ❖ Greeting
 - ❖ Eye contact
 - ❖ Conversation style
 - ❖ Silence
 - ❖ Interpreter
- ❖ **Education**
 - ❖ Modify the delivery and type of information based on patient needs
 - ❖ Provide education in increments to avoid patients feeling overwhelmed by the Western health system
 - ❖ Educate patients about the healthcare system and how to access services



MARRAS & DRENN, 2008

Cultural Considerations

- ❖ Offer a Bicultural Approach to Care
 - Embrace traditional healing approaches
 - Integrate both traditional healing practices and Western medicine
 - Acknowledge and respect traditional healers
 - Approach care holistically
 - Focus on well-being of the family and community




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Conclusion

- ❖ Recognizing cervical cancer-related disparities exist among American Indian women.
 - Higher prevalence
 - More rapidly rising incidence
 - Poorer survival
- ❖ Reducing these disparities requires knowledge of American Indian culture, unique risk factors, and barriers to care.
- ❖ Understanding American Indian culture and integrating traditional healing can help establish trusting relationships and create cultural competency.
- ❖ Incorporating cultural competency all healthcare visits has the potential to improve the health of American Indian women.

Credits and Acknowledgements

- ❖ Dr. Loretta Heuer, PhD, RN, FAAN, DNP Faculty, Advisor, North Dakota State University
- ❖ Mr. Willard Yellow Bird, Jr., Spiritual Healer, Liaison for the Fargo Native American Commission
- ❖ Scott Swanson, Electronic Media Specialist, North Dakota State University
- ❖ Stephen Beckerman, Media Technologies Consultant, North Dakota State University
- ❖ American Association of Nurse Practitioners Continuing Education Center

References

- ❖ Please see attached reference page.



APPENDIX C. TRANSCRIPTION OF TRADITIONAL HEALER INTERVIEW

Video Clip 1: Health and Balance in American Indian Culture

When we talk about the balance of life, we talk about the balance of the body, the spirit, and the soul. One cannot live without the other. If one is out of balance, it reflects the other ones. That is so much into mental health or into sickness. In other words, if the body is sick because of the physical thing, then the spirit is weakened. If the spirit is weakened, then the body controls the spirit and soul. So in order for them to work as a good machine, as a good center of the universe, as a good soul, they all have to work in sequence. You do want the spirit or the soul to be the stronger part because they're the ones that you need to help the body. I was once told that the Native people think, they think in three worlds, three dimensionals, where the non-Natives think in only two worlds. In other words, the non-Natives, they think about the present and about their future. Where the Native Americans, we think about our past, we think about our ancestors and spirits, the spirit world. We think about the present and we think about the future. That is the three dimensional as a tradition, as a culture, as a spirituality, that we look at. If one is out of balance, then our system is out of balance. How do we get into balance? By taking care of our body, by taking care of our spirit, and to learning about our soul, learning that our soul is also part of the creator with our spirit and stuff. That is how we keep in balance.

Video Clip 2: Traditional Healing Practices and Sage

In Biology, in freshmen or sophomore biology in high school, they used to have a maple leaf, I remember, and then they take that maple leaf and put it off to the side. In the book, you will see that little energy around the maple leaf yet. That's still the spirit of the maple leaf. We all have that, so that is what we are going to do is make that energy strong. And by doing that, we take sage, we take our natural medicine that we use in our world because we are all related. Everything has its purpose in this world, so sage has its purpose. We use sage to cleanse our

body, to cleanse our soul, to cleanse our mind, to cleanse our body, but also to make our spirit strong. So when I take that sage, I wipe it over the body in a circular motion all around the body because when I look at that body, if it is a strong body, that life energy should be flowing in a good way so it flows and strengthens the body so any bad things, it reflects them, it goes off. When the body is sick or hurt, it doesn't flow in a good way. It interrupts as it flows around, so we take that sage, and we flow all around the body because we want the energy to go flowing again in a good way. We do that, but then when I also look at the body, I also see energy escaping where the sickness is. And I tell them, "do you know what solar flares are?" And most of them say "yeah, yeah when the sun shoots energy that is called solar flares." I say when I look at that body, I see energy, just like solar flares, shooting. If it is a heart ailment, if it is a brain injury, if it is diabetes and stuff, I see energy shooting out. That is life energy. So we also take that sage, and we put a shield over it. We wipe that area, and we put a shield wherever that energy is and we just concentrate on that energy, that part. Then we do the whole body, but we concentrate where the energy is escaping because what happens is when we put that shield in there, that energy, like a solar flare, starts to escape and hits that shield and goes back within the body because we want that energy to stay within the body to help the healing process.

Video Clip 3: Advice for Healthcare Providers

For healthcare providers when they are providing, especially at the ICU or in a different room, especially the female nurses and stuff. You have men nurses, too, but especially the female nurses. You know, if a spiritual man comes and are doing a ceremony, and they leave sage or leave horse hair or they leave tobacco or cedar and stuff, during those times, those become sacred objects. They become the sacred energy of the ceremony, so a nurse should not grab them and move them unless they have permission. It is just like a priest. You don't go in there and grab their hosts and just move it. The priest will tell you or they will do it themselves.

It is their sacred object, just like us, we have those sacred objects, our energy. They are blessed. They need to ask permission to move it. Now, as a woman, a lot of women still have their monthly that occurs in their life. And in our tradition, they are not to touch it because in our tradition, we believe that when they are having their time, it is passing out bad energy because that energy is dead within their system. It is going to become new again to bring birth back into this world, but that old energy is leaving. So they should not be grabbing if they are having their time of that month. And if they know that, they can say I'll ask somebody else, or I'll ask a male nurse to come in to move it and stuff. That is to understand our tradition and stuff. That's how when you are talking to that person and if you are talking to them, you're going to feel their energy because they are going to feel they know, and it is going to bring you closer to them because you are respecting their tradition. You are respecting them and their culture. And if a person just does that, they are going to feel that warmth and that person is going to understand, he knows who I am. He knows about my people and he is respecting. And it makes me feel good.

APPENDIX D. INVITATION FOR NP COURSE PARTICIPATION



Dear Healthcare Provider,

My name is Allison Peltier, and I am in the Doctor of Nursing Practice program at North Dakota State University. I am currently working on my clinical dissertation and would like to invite you to participate in an online educational module focusing on cervical cancer disparities among American Indian women. The course is entitled “Addressing Cervical Cancer Disparities among American Indian Women.” This hour-long course provides information and resources regarding cervical cancer disparities, contributing factors, barriers to care, and cultural influences among American Indian women. There is no charge for participation in this module, and completion of the module will earn 1.25 continuing education credits.

The website for the survey is: <https://cecenter.aanp.org/>

Simply click on this address to go directly to the American Association of Nurse Practitioners (AANP) website. Choose the “Click For Complete Listing” icon on the right side of the screen. The module will then be the first option on the screen. If the link does not work, copy and paste the above URL into the address bar of your internet browser. Please do not use the Internet Explorer browser to view the module, as this browser is not currently compatible with the AANP website.

Your participation in this project is strictly voluntary.

If you have any questions, please feel free to contact me at Allison.Peltier@ndsu.edu.

Thank you for participating in this important practice improvement project.

Sincerely,

Allison Peltier, DNP-S, BSN, RN
Department of Nursing, Sudro Hall 136
North Dakota State University, Fargo, ND

APPENDIX E. INSTITUTIONAL REVIEW BOARD APPROVAL LETTER



May 9, 2014

FederalWide Assurance FWA00002439

Dr. Loretta Heuer
Nursing
Sudro Hall

Re: IRB Certification of Exempt Human Subjects Research:
Protocol #PH14268, "Addressing Cervical Cancer Disparities among American Indian Women:
Implementing an Educational Module for Healthcare Providers"

Co-investigator(s) and research team: Allison Peltier

Certification Date: 5/9/14 Expiration Date: 5/8/17
Study site(s): varied
Funding: n/a

The above referenced human subjects research project has been certified as exempt (category # 1,2) in accordance with federal regulations (Code of Federal Regulations, Title 45, Part 46, *Protection of Human Subjects*). This determination is based on protocol materials (received 5/2/14).

Please also note the following:

- If you wish to continue the research after the expiration, submit a request for recertification several weeks prior to the expiration.
- Conduct the study as described in the approved protocol. If you wish to make changes, obtain approval from the IRB prior to initiating, unless the changes are necessary to eliminate an immediate hazard to subjects.
- Notify the IRB promptly of any adverse events, complaints, or unanticipated problems involving risks to subjects or others related to this project.
- Report any significant new findings that may affect the risks and benefits to the participants and the IRB.
- Research records may be subject to a random or directed audit at any time to verify compliance with IRB standard operating procedures.

Thank you for your cooperation with NDSU IRB procedures. Best wishes for a successful study.

Sincerely,

A handwritten signature in cursive script that reads "Kristy Shirley".

Kristy Shirley, CIP, Research Compliance Administrator

INSTITUTIONAL REVIEW BOARD

NDSU Dept 4000 | PO Box 6050 | Fargo ND 58105-6050 | 701.231.8595 | Fax 701.231.8099 | ndsu.edu/irb

Shipping address: Research 1, 1735 NDSU Research Park Drive, Fargo ND 58102

NDSU is an equal opportunity institution.

APPENDIX F. PRETEST AND POSTTEST QUESTIONS

1. How often do you discuss cervical cancer screening with American Indian women?/As a result of this activity, how often will you now discuss cervical cancer screening with American Indian women?
 - a. Routinely
 - b. Often
 - c. Sometimes
 - d. Never

2. What disparities do American Indian women experience related to cervical cancer?
 - a. Higher incidence of cervical cancer
 - b. Higher rates of metastasis at diagnosis
 - c. Higher mortality rates
 - d. All of the above**
 - e. A & C

3. What serotypes does the quadrivalent HPV vaccine cover?
 - a. 6, 11, 16, 31
 - b. 11, 16, 18, 31
 - c. 6, 11, 16, 18**
 - d. 11, 18, 31, 42

4. Which of the following statements are true in regards to HPV among American Indian women?
 - a. American Indian women have higher rates of HPV 16 and 18 compared to Caucasian women.
 - b. American Indian women have higher rates of high-risk HPV and different oncogenic types compared to Caucasian women.**
 - c. Rates of HPV are similar among American Indian and Caucasian women.
 - d. American Indian women have lower rates of HPV compared to Caucasian women.

5. Which of the following is an identified risk factor for cervical cancer experienced by American Indian women?
 - a. Diethylstilbestrol (DES) use
 - b. High prevalence of Chlamydia**
 - c. Long-term use of oral contraceptives
 - d. Increased use of intrauterine devices

6. All of the following are significant aspects of traditional American Indian culture and healing except:
 - a. Balance
 - b. Sacred plants and herbs
 - c. Tobacco
 - d. Detoxification methods
 - e. **All of the following are significant aspects in traditional American Indian culture and healing**

7. Which of the following statements is true regarding aspects of American Indian culture that may interfere with adequate cervical cancer screening and follow-up?
 - a. American Indian languages do not have a word for cancer
 - b. Discussions of cancer are thought to lead to the development of cancer
 - c. There is a historical mistrust of Western providers among American Indians
 - d. B & C
 - e. **All of the above**

APPENDIX G. AANP CE PROGRAM EVALUATION QUESTIONS

1. How many years have you been a healthcare provider?
 Less than 5 years 5 – 10 years 10 – 20 years Greater than 20 years
2. Approximately what percentage of American Indian women do you see in your practice?
 Less than 25% 25 – 50% 50 – 75% 75 – 99% 100%
3. In what region do you primarily practice? (Drop down box with 11 AANP regions)

Circle the number that best fits your evaluation of this program:

5=Completely 4=Very 3=Moderately 2=Slightly 1=Not at all

As a result of completing the CE Activity:

4. After completing this activity, I will be able to achieve the following objectives.
5 4 3 2 1
 - a. Recognize common cultural health beliefs and traditional practices among American Indians
 - b. Identify the current cervical cancer disparities experienced by American Indian women
 - c. State factors contributing to cervical cancer-related health disparities among American Indian women
 - d. Identify interventions to improve cultural awareness, establish trusting relationships, and reduce cervical cancer disparities among American Indian women
5. To what degree did the speaker demonstrate expertise and effectiveness in the topic?
 - a. Allison Peltier, DNP-S, BSN, RN
5 4 3 2 1
 - b. Willard Yellow Bird Jr.
5 4 3 2 1
6. To what degree was the content balanced (free of commercial bias)?
5 4 3 2 1
7. How appropriate was the format(s) to promoting learning?
5 4 3 2 1
8. How likely would you be to recommend this program to your colleagues?
5 4 3 2 1

9. As a result of this educational activity:

- I will modify my practice
- I will seek more information before modifying my practice
- I see no need to modify my practice

10. If you plan to modify practice, please explain in the comment box provided at the start of this evaluation how you will modify your practice.

11. What, if any, recommendations would you like to share for future improvement of this program?

12. Was the level of content for NPs: Too Basic? Just Right? Too Advanced?

APPENDIX H. EXECUTIVE SUMMARY

Background

Many minority populations throughout the United States experience significant cancer-related disparities affecting their quality of life. American Indians represent one group of individuals who experience significant disparities in cancer screening, treatment, and health outcomes (Horowitz, 2012). Although effective screening exists, American Indian women are disproportionately affected by cervical cancer compared to other demographic groups. In relation to cervical cancer, American Indian women experience a higher prevalence, a more rapidly rising incidence, and higher mortality rates, which may be related to an interplay of unique risk factors, barriers in healthcare access, and cultural influences on health seeking behaviors (Schmidt-Grimminger et al., 2011).

While primary care providers have an opportunity to reduce health disparities, significant gaps exist related to awareness of cervical cancer disparities among American Indian women (Rogers & Cantu, 2008). Many healthcare providers do not routinely discuss cervical cancer screening recommendations with American Indian patients and feel their inadequate understanding of cultural beliefs serves as a barrier to increasing discussions about cervical cancer (Jim et al., 2012). Enhancing healthcare providers' knowledge of cervical cancer disparities may help facilitate the provision of culturally competent care and improve the quality of care for American Indian women.

Project Summary

Based on the need for enhanced awareness of cervical cancer disparities among American Indian women, a continuing education module was developed in conjunction with the American Association of Nurse Practitioners Continuing Education Center (AANP CE Center). The format of the continuing education module consisted of a PowerPoint presentation with

voiceover and video excerpts from an interview with a traditional American Indian healer, Mr. Yellow Bird. The module incorporated information on American Indian culture, cervical cancer disparities, contributing factors to cervical cancer, and barriers to healthcare experienced by the population. The continuing education module was available online at the AANP CE Center website, which provided participants with around-the-clock access to complete the module at a time and place convenient for their schedules. The module was available to AANP members, as well as non-members without any additional charge. The target audience included any nurse practitioner who provides healthcare to American Indian women in their clinical practice.

Results

The module was evaluated through pretest, posttest, and evaluation questions. Data were collected for approximately three months with a total of 203 participants. Approximately 72.4% (n = 147) of the participants worked as a nurse practitioner for less than 10 years. A majority of the participants (72.9%; n = 148) reported their clinical practice is comprised of less than 25% of American Indian women, while 5.9% (n = 12) of the participants reported their clinical practice consists of 100% of American Indian women.

After completing the module, nearly half of the participants (48.5%; n = 99) reported they planned to modify their practice, and approximately 71.5% (n = 145) of the participants planned to discuss screening recommendations routinely or often. Almost all of the participants (94.1%; n = 191) responded the level of content was “just right” for the experience level of nurse practitioners. A majority of the participants would recommend the program to other health professionals, with 42.6% (n = 86) indicating they were completely likely and 33.8% (n = 69) indicating they were very likely to recommend the program to their colleagues.

The pretest and posttest questions correlated with the four learning objectives of the continuing education module, and a majority of the participants (82.8%; n = 168) believed their

ability to meet the objectives was completely or very enhanced by the program. Six pretest and posttest content-related questions demonstrated learning occurred upon completion of the module, as there was a statistically significant improvement in all six posttest questions. Participants were also able to leave feedback regarding the continuing education module, and the feedback consisted of mostly positive comments regarding the content and quality of the module. Overall, the results indicate the continuing education module had a positive impact on the participants and enhanced their awareness of cervical cancer disparities among American Indian women.

Recommendations

The results demonstrate the participants' knowledge increased as a result of the continuing education module. Healthcare providers working in the primary care setting will undoubtedly care for individuals across the lifespan with different racial and ethnic backgrounds, including American Indians. To meet the needs American Indian patients, healthcare providers must be aware of the unique historical, cultural, lingual, social, and economic influences, as well as common health disparities experienced by the population. The results from the continuing education module demonstrate a need for further education regarding health disparities among American Indian women. Further dissemination of the continuing education module is recommended to all healthcare providers caring for American Indian women in any setting.

Feedback regarding the continuing education module was positive with numerous participants requesting more continuing education activities related to cervical cancer disparities among American Indian women. Based on the reported interest in American Indian health and culture, it is practical to recommend that the AANP CE Center collaborate with AANP members in developing additional continuing education activities related to this important topic.

Collaborating with the Indian Health Service (IHS) Office of Continuing Education may also

offer further information for providers working in IHS facilities. Additionally, education about providing culturally competent care should be incorporated into curricula for family nurse practitioners.

The need for further education among healthcare providers regarding the American Indian population and culture is confirmed by the survey findings from the practice improvement project. Future research aimed at identifying facilitators and barriers to implementing culturally competent care may also be beneficial. Research examining the effect of Gardasil[®] 9 on HPV infections and cervical cancer rates among American Indian women could provide invaluable information with the potential to significantly influence clinical practice recommendations. Ultimately, providing culturally competent care may enable nurse practitioners to better meet the unique healthcare needs of American Indian women and reduce the burden of cervical cancer experienced by the population.