OBSTETRIC OUTCOMES AMONG WOMEN OF THE NAVAJO NATION: A MIXED METHOD STUDY EXPLORING CULTURAL HUMILITY AND MATERNAL HEALTH WITHIN INDIAN HEALTH SERVICES

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ABSTRACT: American Indian/Alaskan Native (AI/AN) women are the first people of North America and yet often the first to be overlooked when it comes to maternal health; due to a complicated history of broken treaties and the long-lasting impacts of colonization. A telling sign about the overall health of the AI/AN population, is that their life expectancy is over five times less than that of the U.S. population (IHS, 2019). Little research exists regarding the factors influencing these health disparities, especially with regards to maternal health outcomes.

We will use an exploratory sequential design to build a baseline for maternal health in the Navajo Nation. For the quantitative analysis, data on 2019 births will be pulled and de-identified via electronic hospital records from four IHS hospitals on the Navajo Nation. The qualitative analysis will involve interviewing ten Navajo women about their experience with childbirth and medical personnel along with transcript coding for common themes. A limitation to this research is the inability to represent a causal relationship as it is a cross-sectional study. There is also the potential for confounding variables influencing the state of maternal health during the research year, such as lack of access to transportation. We encourage follow-up research to better determine the education and training that IHS staff undergo. As our research will involve a vulnerable population, many cautious considerations will be taken into account in order to support and empower Navajo women by ensuring that their voice is heard.

Introduction

Overview of American Indian/Alaskan Natives (AI/AN)

Maternal health and obstetric outcomes for Navajo women are vastly different than those of the white majority population in the United States. Looking beyond the influence of racial health disparities, how does non-indigenous practitioner trust and cultural humility effect obstetric outcomes among Navajo Women? The disparities in American Indian/Alaskan Native (AI/AN) communities have been severely impacted through their health, traditions, and historical events of cultural assimilation brought on by the United States Government. Historical trauma continues to persist within tribes by way of broken treaties and health inequities. These health disparities are represented in western medicine, and can be seen through high rates of obesity, heart disease, and substance abuse (IHS, 2016). As health disparities widen, we want to explore the influence that the lack of cultural humility among health care providers has on indigenous populations, specifically women of the Navajo Nation.

According to the National Conference of State Legislatures, there are a total of "573 tribes federally recognized" in the U.S. who have the rights to receive health care services through Indian Health Services (IHS, 2016). Individual tribes are recognized by the U.S. Government as sovereign nations and honored through a trust known as the Federal Indian Trust Responsibility - a legal obligation under which the United States, "has charged itself with moral obligations of the highest responsibility and trust' towards Indian Tribes"

(Seminole Nation v. United States, 1942). These Federal Indian Policies are a form of protection for the Indigenous population of this country and are used to ensure that the United States Government abides by all treaties. The long-term outcomes of colonization have immensely impacted the health care system within Indigenous communities. These treaties regarding human rights given back to tribal communities are often overlooked, thus resulting in the current health inequities faced by indigenous communities today. Furthermore, these treaties are limited and ambiguous with regards to addressing quality health care for AI/ANs – leaving the AI/AN population unarmed and underserved. The health care sector and the unequal division of resources to the AI/AN population is just one area among many, where this past historical trauma and aftermath of unmet treaties has seeped into.

History of Navajo Nation

The Indigenous people of the Southwest, The Diné, translates into "The People," also known as Navajo. The Navajo Nation is located primarily in the Four Corners and is the largest tribe in the United States, "consisting of more than 25,000 contiguous square miles and three satellites communities, and extends into portions of the states of Arizona, New Mexico, and Utah" (IHS, 2016). On the Navajo reservation there are five federal service units (FSU). Of those five there are four hospitals that provide healthcare to AI/ANs. The United States Census Bureau states the average median income on the reservation per household is 26,862 dollars, which is half the average income at the local level for the state of Arizona, 50,448 dollars, and on the reservation the poverty rate is 38% as compared to the state of Arizona is half the rate of 15% (Center for New Media & Promotion & US Census Bureau, 2017).

Since time immemorial Diné (Navajo) women have led and carried the families. "Traditionally, the Navajos are a matriarchal society, with a descent and inheritance determined through one's mother. Navajo women have traditionally owned the bulk of resources and property, such as livestock" (IHS, 2016). The resilience that each generation carries comes from the women of the tribe. Culturally, Navajo women have always been the leaders and caretakers of the children. There is strong connection carried through pregnancy, which has been impacted by non-indigenous physicians and western medicine. In this particular qualitative study, "American Indian women who were interviewed were uncomfortable seeing a male physician for anything having to do with pregnancy or prenatal and felt it was embarrassing and inappropriate to have a male physician during pregnancy" (Hanson, J.D., 2012). Women should not feel uncomfortable nor discouraged from sharing their experience with practitioners about the health of the well-being of their future child. As this research shows, if Navajo women don't have access to female practitioners, then their patient-practitioner trust could be greatly impacted. It is a vital and important skillset for medical practitioners to have cultural humility when working with vulnerable populations. Maternal

Health in the Navajo Nation

For maternal healthcare on the Navajo Reservation, many barriers stand in the way when it comes to receiving adequate prenatal, perinatal, and postnatal care. "Women who fail to present for prenatal care entirely are at high risk for adverse pregnancy outcomes and are more likely to be non-White" (Bryant et al, 2010). Past research shows gestational diabetes, low birth weight, and little to no prenatal care as common risk factors among AI/AN women. Social determinants are contributing to these barriers, such as socio-economic status, level of education, income, access to healthcare, and family support. In the New Mexico Epidemiology PRAMS Report on, New Mexico Navajo Mothers and Their Infants, 2005-2011, stated "42% Navajo mothers did not receive prenatal care at the beginning of their first trimester and only 49% received adequate prenatal care" (Navajo Epidemiology Center & New Mexico PRAMS/Maternal and Child Health Epidemiology Program, 2011). In multiple studies there are shared themes for Indigenous women, that the lack of care results in higher outcomes of low-birth weight and infant mortality - important health

outcomes that should be addressed, especially in a matriarchal society. The primary caretaker of the family should not be the one to receive the worse quality of care.

The trust that tribal individuals hold with healthcare providers has been influenced by historical trauma, thus maternal health and future generations have been impacted. The AI/AN community is greatly underrepresented and underserved. One can only assume that historical oppression and lack of cultural humility in practitioners has exacerbated the health disparities of this population. In a qualitative study, First Nation individuals shared "their experiences with traditional health care to western health care, and described barriers to care that they had experienced in accessing medical doctors (e.g., racism, mistrust), as well as the benefits of traditional healing (e.g., based on relationships, holistic approach)" (Auger, Howell, & Gomes, 2016). This study was created for the Urban Indigenous population in Vancouver, British Columbia. The findings suggested that the health inequities they faced were from a lack of quality care and cultural understanding. Many had identified the lack of cultural awareness and mistrust with their practitioners thus receiving poor quality care, indicating a need in health care for practitioners to establish trust with tribal individuals. To establish a foundation of trust with a patient, practitioners must be culturally sensitive when providing health services. Limited research on certain tribes throughout the North American continent has limited the amount focus on Navajo Nation Women. The research that could relate and create a foundation in the research study is Disparities in Risk Factors and Birth Outcomes Among American Indians in North Dakota, "Racial disparities existed in education, teen births, tobacco use during pregnancy, and breastfeeding initiation. Disparities widened for inadequate prenatal care, illegal drug use during pregnancy, and infant mortality from 2007-2009 to 2010-2012 and narrowed for sexually transmitted infections and alcohol use during pregnancy" (Danielson et al, 2018). Danielson et al., also found, that the infant mortality rate was three times higher for AI/AN women when compared to white women in North Dakota; identifying AI/AN women as a vulnerable and disadvantage population.

The future AI/AN generations will not succeed if maternal health continues to be neglected. Understanding the cultural and historical background of the Navajo People is vital for all healthcare practitioners, especially non-Indigenous ones, if they are to positively impact maternal healthcare. It is important that healthcare providers understand the cultural history and values that a matriarchal society holds. We believe that this foundational difference contributes largely to a lack of cultural humility among medical practitioners, resulting in poor patient-practitioner trust and negatively impacted obstetric outcomes/experiences of indigenous populations.

Research Question and Hypothesis

There are huge health disparities between non-indigenous and indigenous (American Indian and Alaskan Native) populations in the United States. This is true to the extent that the overall life expectancy of the American Indian and Alaskan Native (AI/AN) population is over five years less than that of the entire U.S. population life expectancy (IHS, 2019). Research is greatly lacking on AI/AN populations in the U.S., especially with regards to maternal health disparities (Anderson, Spicer, & Peercy, 2016). Past research suggested that "disparities in birth outcomes are important markers of population health," because they provide insight on the state of maternal and child health within a community (Dennis, 2018). Our mixed methods research will explore the relationship that cultural humility of healthcare practitioners has with maternal health and obstetric outcomes in the Navajo Nation. Our research is founded on this question: how does non-indigenous practitioner trust and cultural humility influence obstetric outcomes among Navajo Women? We suspect that lack of cultural humility among medical practitioners and poor patient-practitioner trust negatively impacts the obstetric outcomes/experiences of Navajo Women.

Research Methodology

Design Summary

We will be using a mixed methods research design, which we selected because of the insight that it can provide statistically and culturally. In order to get a baseline for the current state of maternal health in the Navajo Nation and better understand the role of cultural humility on maternal health outcomes, an explanatory sequential study design was determined to be the best fit. Many studies show that "health disparities contribute to racial/ethnic variation in morbidity and mortality in the United States, with many minority populations frequently experiencing greater prevalence of poor health outcomes compared to non-Hispanic whites" (Anderson et al., 2016). However, multiple studies agree that little research has been done to understand why these disparities persist and what factors contribute to their continuation, especially in the U.S. AI/AN populations (Anderson et al., 2016; Danielson et al., 2018; & Dennis, 2018). One of the main goals of our research will be to create a snapshot of maternal health in the Navajo Nation and to gain an understanding of how cultural humility (or lack thereof) within IHS negatively influences overall maternal health by way of obstetric outcomes for Navajo women. We propose to do this by first pulling data from the four existing IHS hospitals on the Navajo Nation. We will follow with a narrative approach, wherein we will partner with tribal community members and interview ten women who self-identify as AI/AN, utilize IHS, and have had adverse obstetric experiences.

There is no golden standard or set of universal indicators for the measurement of positive or negative obstetric outcomes nor what qualifies as adverse because "few agreed-upon measures of quality of obstetrical care currently exist for evaluation of disparities in care quality" (Bryant, Worjoloh, Caughey, & Washington, (2010). Due to this lack of consensus, we selected measurements that we felt, from our literature research, would provide a more multidimensional view of maternal health in the Navajo Nation. All data set findings will be compared to the white U.S. population for measurement since it is the majority ethnic group that most maternal health research is based on. Data will be pulled via electronic hospital records with help from IHS. We expect to find that there is a lack of cultural humility and training among IHS health practitioners, especially non-indigenous ones, and that this deficit in cultural understanding combined with historical trauma and lack of patient-practitioner trust, negatively influences overall maternal health and obstetric outcomes/experiences of Navajo women.

Population

The target population for data collection will be the four IHS hospitals that service the Navajo Nation: Chinle Comprehensive Health Care Facility, Crownpoint Health Care Facility, Gallup Indian Medical Center, and Northern Navajo

Table 1. Data collection.

Maternal Health	Cultural Humility
• Maternal mortality.	• Number of OBGYN's employed by each hospital.
• Infant mortality.	• Number of years each skilled provider has worked at that hospital.
• Emergency C-section.	• Cultural humility training required by hospital.
• NICU Admission.	• Provider's association with tribal community.
• Age of Mother.	• Average number of on-call practitioners each day of the week.
• Gravida (number of pregnancies).	• Number of certified nurse's working during each labor.
• Number of pre-natal visits.	• Gender of skilled practitioners on shift.

Medical Center (IHS, 2019). For the narrative section of our study, we will find our sample of ten participants who are self-identifying AI/AN Navajo Native Females, through judgmental sampling via a community member. Participants must meet the following criteria in order to be eligible for the study: a) be between the ages of 14-45, b) have given birth at any of the four IHS hospitals on the Navajo Nation during the years 2018-2019, and c) have had a labor experience that they consider to be unplanned and/or unfavorable.

Sampling Techniques and Data Collection

Quantitative Phase

We will pull data from four IHS hospital's electronic health records. Data will be de-identified by IHS, in order to maintain confidentiality with all the data sets. First, we will look at the number of births that took place in the year 2019 at each hospital. The data in Table 1 will then be collected on each birth to measure what we deem (since there is no one consensus in research) to be maternal health and practitioner cultural humility indicators.

After the above data is collected on each birth, it will then be analyzed quantitatively and put into percentages of the type of outcome that the birth resulted in.

Qualitative Phase

For the qualitative data analysis, we will ask ten women of Navajo descent open-ended questions that will focus on their experience with labor, delivery, and interactions with medical personnel. The interviewer will prepare questions ahead of time and have pre-set tools to help prevent bias and any loaded questions from being asked. The goal of each interview will be to hear and collect the participant's stories about her experience with delivery and medical personnel interactions. In order to specifically assess perceived trust between patients and practitioners we will delve into interviewees relationships with medical professionals, exploring whether they felt in control of the medical decisions being over their bodies as well as if they felt heard, understood, and listed to by their doctors. Furthermore, we want to know if they believe that medical providers both understand and will advocate for their health. All interview questions will be open-ended and serve as an unbiased guide for the interviewer. Interviews will be recorded for transcript coding to identify common themes, outcomes, or mindsets.

This sample will be found through community-based participatory research by contacting the executive staff of The Changing Women Initiative (a non-profit organization seeking to "renew cultural birth knowledge to empower and reclaim indigenous sovereignty of women's medicine") (Changing Women Initiative, 2019). Through this organization we will find a community leader to initiate sampling, specifically, the snowball sampling effect, by reaching out to executive staff of The Changing Women Initiative and the founder herself (who is a tribal member of the Navajo Nation), and gain participants through their community relationships. This method was chosen because there is a lack of reporting on pre-natal care in this population, and we want to hear about their personal experiences in order to give the hospital data humanity.

Ethical Considerations

In order to maintain culturally appropriate ethics throughout our research, in addition to IRB approval, we will be submitting our proposal to be reviewed by the Navajo Nation Human Research Review Board. As stated above, all data pulled from the four IHS hospitals will be de-identified prior to reaching the research team. Any statistical data shared with the public from this research will be presented as collective sums so as to remain confidential on an individual basis. For the narrative section of the study, all interviewees will be found through community-based participatory research.

Since this is a historically oppressed population, we decided that no incentives would be given to participants for fear of appearing coercive. Each participant will be provided with a list of interview questions beforehand, so that they may prepare for

the interview in advance. Participants will be asked to provide both written and verbal consent before the interview is conducted. Participants may opt out of answering any questions that they see fit and will be encouraged to share their story and describe their obstetric experiences without researcher agendas. Before beginning the interview, the interviewer will remind the participant that responses are confidential, stories will be made confidential for the rest of the research team, and only themes from stories will be shared with the general public. Ultimately, individual participants will have control over their narrative when it comes to publishing and will furthermore have the ability to read and/or veto their manuscript. The research interviewer will be an individual of AI/AN descent who affiliates with the Navajo Nation Community in order to account for cultural awareness and sensitivity. The interviewer will remove all names and identifiable information from the interview findings for the rest of the research team in order to maintain individual participant confidentiality.

Discussion and Future Directions

Significance

"The United States spends more on maternity care than any other country in the world, yet the US maternal mortality and infant mortality rates are among the highest of all industrialized countries" (Howell & Zeitlin, 2017). As we stated earlier, these high rates of mortality are seen most in underrepresented and marginalized groups. Research conducted on the health of Navajo women is not only vital to the tribal community, but is an important piece in the greater maternal health issue in the U.S. As suggested by Howell & Zeitlin (2017), acknowledgement of the impact that racial/ethnic disparities have on obstetric outcomes exists, but research with causal links have yet to be conducted. Our research would have the opportunity to address missing gaps in knowledge regarding quality of care and racial/ethnic health disparities.

Limitations

As with all cross-sectional studies, the greatest limitation is timing and the inability that one point in time has to represent a causal relationship. Additionally, there is potential for confounding variables that influence the state of maternal care during the selected research year (e.g. the opioid crisis, natural disaster, etc.). According to Ho et al. (2018), lack of access to transportation, healthcare services, and resources within tribal healthcare systems are current barriers for AI/AN populations. Any of these could be confounding variables to the data that we would pull from IHS health records. A limitation specific to the narrative approach is the potential impact that any outsiders or non-indigenous researchers could have on the data that they are collecting via interviews. We acknowledge the oppression of the Navajo Nation as well as other AI/AN communities in the U.S. which have undergone colonization, historically involving the violation of human rights. We would address this by collaborating with community partners, and by having a researcher who affiliates with Navajo Nation, is of AI/AN descent, and identifies as a female, conduct the interviews.

Innovation

We believe that the lack of generalizability with our study is a strength because it advocates for community specific research rather than assuming that all like-minded populations face the same health barriers. This way of thinking is innovative and necessary for past and future research analysis. We acknowledge that every tribe is different, and therefore has different health needs as a community that should come with customized research when creating solutions to those needs. Since our research would be restricted to the Navajo Nation, the results of it will be specific to the Navajo community and should not be applied as likeness to other AI/AN populations or reservations, but instead used as a foundation to initiate reservation-specific research.

Future Directions

Follow-up research is encouraged to assess the education and training of healthcare practitioners within IHS and test the implementation of community-based cultural humility training. "Today, Navajos traditional lifestyle is under the substantial stress brought about by rapid change in their society." (IHS, 2019) As this transition takes place, research on the AI/AN population is incredibly crucial. If further research is not conducted, then the health disparities between the indigenous and non-indigenous communities will only widen. Cultural understanding and practitioner sensitivity will be a critical step as further Westernization takes place in AI/AN populations. This study could encourage future research on the effects that culturally incompetent practitioners have on other health outcomes among AI/AN communities, such as diabetes or chronic illness. Long term, we hope that this research project would promote future research of AI/AN communities, and thus create public and scientific advocacy for a population that should have been fought for, and not against, a long time ago.

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