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Abstract

Early and regular prenatal care, which aims to prevent and identify complications associated with pregnancy, birth, and newborn health, is associated with improved health of pregnant women and their infants. American Indian/Alaska Native (AI/AN) women are at risk for pregnancy, birth, and newborn health complications associated with health disparities including poverty, lower educational levels, limited access to healthcare, and adverse childhood events. American Indian/Alaska Native women in the United States experience barriers specifically related to prenatal care, including lack of access, dissimilar communication styles, and inconsistent continuity of care. Culturally appropriate prenatal care should be provided to reduce maternal and newborn morbidity and mortality. Community-based interventions such as home visiting, that may potentially improve prenatal care, focusing on the American Indian tribes of the Northern Great Plains, specifically North Dakota, are discussed.

Key Words American Indian/Alaska Native; Health disparities; Historical trauma; Prenatal care; Social determinants of health.

PRENATAL CARE FOR AMERICAN INDIAN WOMEN

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There are 573 American Indian/Alaska Native (AI/AN) federally recognized tribes in the United States with approximately 5.2 million members enrolled in Indian Health Services (IHS, 2019). The AI/AN people experience lower health status when compared with the general U.S. population with a lower life expectancy by 5.5 years and a higher disease burden due to “inadequate education, disproportionate poverty, discrimination in the delivery of health services, and cultural differences” (IHS, para. 2). Many of the health disparities occur early in life as represented by the high infant mortality rate (death under 1 year of age) in the AI/AN population of 9.21 deaths per 1,000 live births as compared with the white non-Hispanic average of 4.67 deaths per 1,000 live births and overall U.S. average of 5.79 deaths per 1,000 live births (Ely & Driscoll, 2019). A recent study found “rates of severe maternal morbidity and mortality were twice as high” among AI/AN women than non-Hispanic white women and higher in AI/AN women living in a rural setting versus an urban setting (Kozhimannil et al., 2020, p. 297). Early and regular prenatal is essential for the health of the childbearing woman and infant to help prevent complications associated with pregnancy, birth, and newborn health. American Indian/Alaska Native women are at great risk for pregnancy, birth, and newborn health complications related to health disparities and frequent comorbidities of chronic hypertension and preexisting diabetes (Hanson, 2011; Kozhimannil et al.).

American Indian/Alaska Native women in the United States experience barriers to prenatal care, including lack of access, dissimilar communication styles, and inconsistent continuity of care; therefore, culturally appropriate prenatal care should be provided to reduce maternal and newborn morbidity and mortality. Community-based, evidence-based interventions such as home visiting to potentially improve prenatal care focusing on the American Indian tribes of the Northern Great Plains, specifically North Dakota, are presented.

Social Determinants of Health Disparities affecting AI/AN Health

Health of an individual or community is partly dependent upon access to social and economic opportunities, resources and support within those homes and communities, quality of education, safety and cleanliness of the environment, and positive social interactions and relationships (Healthy People 2020, n.d.). The five social determinants of health as determined by Healthy People 2020 (n.d.) include economic stability, education, social and community context, health and adequate healthcare, and neighborhood and environment. According to the Centers for Disease Control and Prevention, disparities “exist when differences in health outcomes or



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States was 4.4% in 2017; however, the unemployment rate for the AI/AN population was 7.8%, slightly above the non-Hispanic black unemployment percentage of 7.5 (National Center for Educational Statistics).

The AI/AN population is “one of the most economically impoverished populations in the United States” (Weinstein et al., 2017, p. 511). U.S. Census Bureau data of 2015 show a median income of \$37,227 and a 28.3% poverty rate for the AI/AN group as compared with a \$53,657 median income and a 15.5% poverty rate for the nation (Weinstein et al.). Disparity in income has a significant impact on health and well-being; the Great Plains tribes (North Dakota, South Dakota, Nebraska, and Iowa) are prone to poorer health outcomes and shorter life expectancy than many other service areas (Weinstein et al.). An example of this disparity is Sioux County, located within the Standing Rock Sioux Reservation, which ranks 49th of 49 North Dakota reporting counties, in overall health outcomes including life expectancy of 67.7 years, children living in poverty (43%), and single parent households (69%; University of Wisconsin Population of Health Institute, 2019).

health determinants are observed between populations” (2013, p. 3). Poverty and health are inexplicably linked together; “poverty is actually a health hazard” (Smith, 2012, p. 256).

Statistics on social determinants of health in the AI/AN population are concerning. Seventy-two percent of AI/AN individuals earn a high school diploma, compared with 78% of non-Hispanic black and a national average of 85% (National Center for Educational Statistics, 2019). The *2019 Kids Count Data Book* notes 33% of AI/AN and non-Hispanic black children live in poverty compared with the U.S. average of 18% (Annie E. Casey Foundation, 2019). The unemployment rate in the United

Wisconsin Population of Health Institute, 2019).

Importance of Prenatal Care

The focus of prenatal care is to educate pregnant women, identify risk factors in both mother and baby, alleviate preventable risk factors, and treat complications (National Academies of Sciences, Engineering, and Medicine [NASEM], 2020). Ideally, prenatal care should begin within the first trimester of pregnancy (American Academy of Pediatrics & American College of Obstetrics and Gynecology, 2017). The percentage of women receiving prenatal care has steadily increased in the past several decades with 77.5% receiving prenatal care in the

first trimester in 2018 (Martin et al., 2019). First trimester prenatal care varies greatly by race with non-Hispanic whites receiving care at 82.5%, non-Hispanic blacks at 67.1%, and AI/AN at 62.6% (decreased from 63.4% in 2017) in 2018 (Martin et al.). Although the percentage of AI/AN pregnant women receiving early prenatal care has risen from 57% in 2010, the growth continues to lag other population groups (Johnson et al., 2010; Martin et al.). U.S. data in 2018 revealed an overall late or no prenatal care percentage of 4.5% for non-Hispanic whites, whereas this percentage was 13.1 in the AI/AN population (Martin et al.).

Geographical differences have been noted in the percentages of AI/AN women receiving late or inadequate (infrequent visits) prenatal care. Johnson et al. (2010) reported a notable disparity occurring in the Midwest cluster of states including North Dakota with the percentage of inadequate prenatal care (inconsistent care) of 23.9% in the United States for non-Hispanic whites and 44.6% for AI/AN; the North Dakota percentage for AI/AN women receiving inadequate prenatal care was 55.6%. Late or inadequate prenatal care increases the risk factors for poor birth outcomes, premature birth, and increased rates of infant mortality (Hanson, 2011). Given the infant mortality rate of 9.21 deaths per 1,000 live births in the AI/AN population versus the overall U.S. average of 5.79 deaths per 1,000 live births, obtaining early and regular prenatal care is a critical aspect for pregnant AI/AN women (Ely & Driscoll, 2019).

The American Indians of the Northern Great Plains (North Dakota and South Dakota) “consistently rank highest for AI/AN health disparities” (Danielson et al., 2018, p. 1521). A 2018 study using 2007–2012 live birth data in North Dakota describes numerous racial disparities for high risk factors and poorer birth outcomes in American Indian women compared with white women including: 1.4 times higher preterm birth rate (<37 weeks gestation); 1.3 times higher low birthweight (<2,500 g); 3.5 times higher infant mortality rate; 8.3 times less likely to receive adequate prenatal care; 3.7 times higher birth to teen mothers; 13.3 times higher use of illegal drug use; and 5.2 times higher incidence of sexually transmitted infections present during pregnancy (Danielson et al.). Maternal risk factors leading “to poor birth outcomes among AI/AN women” include “psychosocial, behavioral, sociodemographic, and medical variables” (Raglan et al., 2016, p. 21).

Risk Factors for Limited Prenatal Care in AI/AN Women

Psychosocial and Behavioral Factors

Brave Heart (1998) explored the historical trauma theory as it applies to the American Indian population’s loss of life related to warfare and infectious diseases, homeland, culture, and spiritual traditions due to colonization by the advancing settlement by Europeans of North America. The resulting historical trauma or unresolved grief, which has been described as a “soul wound,” has



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affected subsequent generations as family units were separated and cultural practices forbidden (Brave Heart, 1998). American Indian children were taken from their homes and placed in boarding schools for assimilation into the dominant culture well into the 1950s (Whitbeck et al., 2009). Several generations of those children “were deprived of traditional parental role models,” thus interrupting the “intergenerational transmission of healthy child-rearing practices” (Warne & Lajimodiere, 2015, p. 571). In addition to separation from family and homeland, many of those in the boarding schools were exposed to physical, sexual, and emotional abuse leading to mental health trauma and the subsequent high rates of “alcohol-related health statistics, including injuries, domestic violence, homicide, and suicide” (Warne & Lajimodiere, p. 571).

Kenney and Singh (2016) studied prevalence of parent-reported adverse childhood events (ACEs) in AI/AN children from 0 to 17 years of age. Results revealed that AI/AN children experience higher instances than non-Hispanic white children in eight of nine ACEs: “income deprivation, witnessing or experiencing violent victimization, racial/ethnic discrimination, household substance abuse, domestic violence, parental incarceration, divorce and death of a parent” (Kenney & Singh, 2016, p. 9). Higher accumulation of ACEs increases prevalence of lack of emotional control, school problems, depression, and anxiety (Kenney & Singh).

Historical trauma, including implementation of boarding schools, has led to interruption of traditional parenting skills, intergenerational depression, increases in alcohol and substance abuse, and mistrust of the dominant white population related to government relocation and broken treaties, and “a response to a profound denial of a culture’s right to exist and the attempt to eradicate cultural

identity” (Whitbeck et al., 2009, p. 12). Prevalence, role, and impact of ACEs on health disparities in the AI/AN population must be thoroughly evaluated to redistribute health resources toward health promotion rather than chronic disease management (Warne & Lajimodiere, 2015). Although prenatal care is well recognized as preventative care, factors of depression, substance abuse, and family disruption due to historical trauma and adverse childhood events in the lives of American Indian women have neither fostered nor supported an environment of health promotion but rather led to poor outcomes for maternal and newborn care.

Sociodemographic Factors

Access to prenatal care may be limited due to a lack of healthcare providers, a lack of or unreliable transportation, and household instability. An example is Sioux County, North Dakota, with a primary care provider to resident ratio of 1,460:1 as compared with the state ratio of 775:1 and a severe housing problem (defined as a percentage of households with at least one of four housing problems: overcrowding, high housing costs, lack of kitchen facilities, or lack of plumbing facilities) of 23% as compared with the state percentage of 11% (University of Wisconsin Population of Health Institute, 2019). Maternal age less than 18 years of age and unmarried pregnant women are associated with a greater risk for preterm birth (Raglan et al., 2016). According to 2018 birth data, 8.9% of AI/AN births were to mothers less than 20 years of age (U.S. average 4.8%) and 68.2% of AI/AN births were to unmarried women (U.S. average of 39.6%; Martin et al., 2019). Factors such as poor housing may not have a direct impact on a woman’s access to prenatal care; however, components of a potentially chaotic household (>four members), a young maternal age, and unmarried status (potentially less support) may negatively influence implementation and consistency of prenatal care.

Cultural Factors

Although the great majority of AI/AN women have access to prenatal care and participate in prenatal care, it is necessary to gain a better understanding as to why this care may be late or inadequate. Hanson (2011) interviewed 58 Northern Plains American Indian women of childbearing age who had given birth to a live infant. Themes identified were communication, institutional, and interpersonal barriers. Communication barriers included: physicians who seemed too busy to respond to questions, physicians who seemed not to care about the woman as an individual, and a lack of trust in physicians and their “modern ways” (Hanson, 2011). These substandard communication experiences not only deterred women from seeking care during pregnancy but experiences were also shared with other women thus creating distrust of the provider or healthcare system. Institutional barriers identified in the clinic setting during prenatal visits or postpartum visits included: long waiting times followed by a short visit with the provider, lack of a separate waiting room for pregnant women and young infants, and inconsistency

in seeing the same provider from visit to visit leading to the inability to form a trust relationship (Hanson). Interpersonal barriers included unreliable transportation; personal problems such as abuse, depression, or substance abuse overriding prenatal visits; and discomfort with seeing a male physician during pregnancy (Hanson). This study provides valuable information as to how barriers to prenatal care for American Indian women could be overcome. McGary (2012) describes the impact of minority populations’ distrust of the healthcare system has upon health; whether this distrust is warranted or not, in a just society it must be addressed.

Over 500 federally recognized AI/AN tribes exist in the United States, each with their own unique, culturally significant spiritual and ceremonial traditions, but some similarities among them are identifiable. In many tribes, physical and spiritual health are closely related with mind, body, and spirit all contributing to health and well-being (Valdez et al., 2009). American Indian/Alaska Native belief systems hold that children are a gift from the Creator; therefore, childbearing women are to be honored and respected as givers of this sacred life (IHS, n.d.). Family kinships are very important to AI/AN people with elders playing an important role during the pregnancy and in the rearing of children and often includes an extended family of grandmas, “aunties,” and cousins (Hanson, 2011). As tribal beliefs and traditions vary greatly, the key to culturally sensitive care is to talk to AI/AN women about their unique spiritual beliefs, ceremonies, and use of complementary medicine.

Potential Solutions for Improving Maternal–Newborn Outcomes in AI/AN Women

Mortality among U.S. children has declined significantly over the past several decades; however, substantial disparities still exist for those living in poorer communities (Olds et al., 2014). A nurse home visiting program, the Nurse-Family Partnership (NFP) for low-income, first-time mothers with home visits during pregnancy through the first 2 years of the child’s life began in 1990 (Olds et al.). Children visited by nurses demonstrated higher intellectual functioning, greater vocabulary scores, and fewer behavioral problems (Olds, Kitzman, et al., 2004). Follow-up data 2 decades later revealed lower mortality rates in both mothers and children in the NFP (Olds et al.). A similar study examining differences between nurse home visits and paraprofessional home visits in pregnancy and infants through 2 years of age revealed interesting though complex results. Though results were positive for both types of home visitation, nurse home visit children scored higher in language development, behavioral adaptation, and executive functioning, whereas the paraprofessional home visit mothers reported a greater sense of mastery and better mental health (Olds, Robinson, et al., 2004). Olds, Robinson, et al. (2004) theorized the nurse visitors perhaps focused more on infant development, whereas the paraprofessionals focused more on maternal well-being.

Numerous studies have supported the short- and long-term benefits of home visiting programs during pregnancy and infancy in low-income, at-risk families with limited access to care (Barlow et al., 2006). In 2001, Barlow et al. implemented a paraprofessional home visiting program on two reservations in the Southwest; paraprofessionals were chosen due to a shortage of nurses on the reservations, greater cost of a nurse versus a paraprofessional, and ability to train tribal community members who were familiar with the culture as paraprofessionals (Barlow et al.). The paraprofessionals received 500 hours of training and testing after the protocols (25 visits in 41 lessons from 28 weeks gestation to 6 months postpartum) and lessons were developed (prenatal care, breastfeeding, infant care, parenting, etc.). Cultural adaptation to lesson material including style, graphics, and content was made through community-based participation (Barlow et al.). Results found mothers were significantly more knowledgeable about infant care at 2 and 6 months postpartum.

Two additional studies have been completed because the initial 2001–2002 study as the paraprofessional home visitation program has made several expansions and minor revisions to the original program (Mullany et al., 2012; Walkup et al., 2009). In 2006, the paraprofessional home visiting program became known as the Family Spirit Program (n.d.) through a collaborative process known as Community Based Participatory Research (CBPR), involving the Johns Hopkins Center for American Indian Health and the tribal communities receiving the home visiting program (Mullany et al.). Given the history of mistrust of government and the historical trauma experienced by AI/AN people, obtaining the full participation and decision-making of the communities was essential. Community Based Participatory Research engages community members and their local knowledge to understand health problems and design interventions to better address specific barriers of a population (Montag et al., 2012; Mullany et al.).

A 2015 study of paraprofessional home visiting assessed the 3-year outcomes of the Family Spirit Program in the domains of parental competence, maternal emotional and behavioral functioning, and children's emotional and behavioral functioning (Barlow et al., 2015). Results of 320 participants (mothers) found the group receiving the Family Spirit Program reported higher parenting knowledge and lower scores for depression and externalizing problems (opposition/defiance, rule breaking, and social problems); child outcomes at 12 months and 36 months of age revealed lower scores for externalizing behavior (activity/impulsivity; defiance/aggression), internalizing behavior (distress/anxiety; inhibition/withdrawal), and dysregulation (of sleeping, eating, emotions, and sensory experiences) (Barlow et al.).

Recent tribal Maternal Infant Early Childhood Home Visiting (MIECHV) federal funding has been set aside to improve knowledge on how to best provide evidence-based home visiting interventions to low-income AI/AN communities (Barlow et al., 2018). Four tribal settings have begun the Family Spirit home visiting program:

the Choctaw Nation of Oklahoma, the White Mountain Apache Tribe in Arizona, the Kodiak Area Native Association in Alaska, and an urban Indian center in Oakland, California (Barlow et al.). These sites reflect the vast diversity of land, culture, language, and population density of AI/AN people in the United States. Lessons learned from these four sites and other tribal-based home visiting programs will advance the positive outcomes noted in previous Family Spirit home visiting programs to better address the health, economic, and educational disparities of the AI/AN people.

Clinical Implications

Research has shown prenatal and early childhood home visiting programs in low-income, at-risk mothers and their children have positive maternal and child outcomes (Olds, Kitzman, et al., 2004; Olds et al., 2014; Olds, Robinson, et al., 2004). Research has also shown paraprofessional home visiting programs (Family Spirit) to pregnant American Indian women and their young children have positive outcomes including an increase in parental competence and improvement in maternal and children's emotional and behavioral functioning (Barlow et al., 2015; Mullany et al., 2012; Walkup et al., 2009). Given the concerning statistics related to late entry into prenatal care or inadequate prenatal care for AI/AN women compared with the general U.S. population, it is obvious that changes need to be made. Further research is needed to determine the impact of home visiting programs on earlier entry and increased consistency in prenatal care.

Social determinates of health have been identified that have an impact on the likelihood of AI/AN women receiving early and adequate prenatal care including socioeconomic, psychosocial, behavioral, and sociodemographic factors. Historical trauma has exacerbated the distrust of government, healthcare, and the dominant white society. Barriers to prenatal care related to communication, institutional policies, and interpersonal problems have been identified. Collaboration between maternal newborn healthcare providers, the public health community, and IHS facilities could remove these barriers to prenatal care.

Maternal-child nurses and public health nurses are well versed in preventative care and could initiate conversations within their respective entities to work toward development of the Family Spirit paraprofessional home visiting program on each tribal reservation. Funding of evidence-based home visiting interventions is available through tribal MIECHV (Barlow et al., 2018). A CBPR approach, engaging the tribal council, community members, IHS representatives, and the public health community, would garner support for such a program. According to Butts and Rich (2013, p. 46), "the mission to define and attain some measure of social justice is an ongoing and difficult activity." Nurses are known to be strong patient advocates; advocacy must move from the individual patient bedside to the community setting when unmet patient needs have been identified (Butts & Rich, 2013). Adequate and consistent prenatal care for AI/AN women has been identified as one of those unmet needs;

CLINICAL IMPLICATIONS

- Early, consistent prenatal care has long been recognized as important for the health of the childbearing woman and infant to help prevent perinatal and neonatal complications.
- American Indian/Alaska Native women in the United States experience barriers related to prenatal care, such as lack of access, dissimilar communication styles, and inconsistent continuity of care. First trimester prenatal care varies greatly by race with non-Hispanic whites receiving care at 82.5% and AI/AN at 62.6%.
- Research supports benefits of home visiting programs during pregnancy and infancy in low-income, at-risk families with limited access to care.
- The Family Spirit Paraprofessional Home Visiting Program demonstrates higher parenting knowledge and lower scores for depression and externalizing problems; child outcomes at 12 months and 36 months of age revealed lower scores for externalizing and internalizing behavior, and dysregulation.
- Maternal-child nurses and public health nurses should initiate conversations with local tribal councils, Indian Health Service facilities, and tribal community members to establish nurse or paraprofessional home visiting programs in AI/AN communities.

maternal-child and community and public health nurses must become stronger advocates for AI/AN women and their young children.

Research has shown that a paraprofessional home visiting program for pregnant women and their young infants that engages the knowledge and participation of the tribal community will bring about positive maternal and infant outcomes in American Indian women. Although prenatal care and maternal infant outcomes have steadily improved in the United States in the past 20 years, this positive trend in health has not been realized by the AI/AN population (Ely & Driscoll, 2019; Kozhimannil et al., 2020). The health disparities of the AI/AN population, specifically the population of Sioux County, ND, have been provided. It is noted an evidence-based home visiting program is absent from this region. The Family Spirit paraprofessional home visiting program for childbearing women and infants could bring positive health outcomes to Sioux County. It is time to tackle the inequitable social determinants of health and empower AI/AN families with the opportunity to experience the health and well-being everyone deserves. ❖

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