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Using the Interactive Theory of Breastfeeding to Promote Breastfeeding within the Indigenous Population

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USING THE INTERACTIVE THEORY OF BREASTFEEDING TO PROMOTE BREASTFEEDING WITHIN THE INDIGENOUS POPULATION

by

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Abstract

Despite known benefits of breastfeeding, historical trauma of the Indigenous population continues to result in low breastfeeding initiation and duration rates. This scholarly effort was conducted to develop an evidence-based strategy to promote breastfeeding within the Indigenous population, to enhance early childhood health and family bonding. A comprehensive literature review of CINAHL, Medline (PubMed), PsychINFO and Cochrane data bases identified 149 number of sources, of which 39 met the inclusion criteria of using the key words "Native American" AND "Indigenous" AND "breastfeeding" AND "support" within the timeframe of 2013-2018, with the location of North America. Effective strategies to promote breastfeeding emerging from this review included increasing breastfeeding resources, support and education using a healthy equity lens to ensure cultural considerations. The conceptual framework of the Interactive Theory of Breastfeeding served as the framework for the project and findings.

Introduction

Breastfeeding is the recommended best choice for infant feeding (AAP, 2012). Recommendations include exclusive breastfeeding for 6 months and maintaining breastfeeding in a child's diet for at least 2 years, along with nutritionally safe and adequate foods (WHO, n.d). Breastfeeding has both short term and long-term benefits for infants and breastfeeding mothers (AAP, 2012). Benefits for infants include reduced allergies, obesity, respiratory infections, ear infections, necrotizing enterocolitis and it is a protective factor against sudden infant death syndrome and infant mortality (AAP, 2012). Benefits for the mother include decreased incidence of postpartum depression, reduced risk of hypertension, diabetes, cardiovascular disease, breast cancer and ovarian cancer (AAP, 2012). Economic benefits are also related to breastfeeding with reduced waste and increased savings related to formula costs (APA, 2012).

Despite the known benefits to mother and infant, breastfeeding rates within the Indigenous population continue to be statistically lower than other racial groups (Louis-Jacques, Deubel, Taylor & Stuebe, 2017). Breastfeeding rates in the Indigenous population are significantly lower with only 68.3% of babies ever breastfed compared to the U.S. rate of 81.1% and the Healthy People 2020 goal of 81.9% (Louis-Jacques et al., 2017). At 12 months only 21.6% of babies are getting any breastmilk, while the Healthy People 2020 goal is 34.1% (Louis-Jacques et al., 2017).

There are many reasons why a mother may choose not to breastfeed or perhaps does not meet her breastfeeding goals. Flannery (2017) noted barriers to breastfeeding include “lack of knowledge, social norms, poor family and social support, embarrassment, lactation problems, employment and child care, and barriers related to health services” (p.26). Ehlers, Gizer, Gilder, Ellingson and Yehuda (2013) note that barriers specific to Indigenous people include lack of acceptance and support within work settings, family and culture, language and literacy barriers,

lack of access to breastfeeding education, acculturation and lifestyle choices. Another consideration, which is unique to the Indigenous community, is the long reaching impact of historical trauma (Ehlers et al., 2013). Historical trauma is the "intergenerational collective experience of complex trauma that was inflicted on a group of people who share a specific group identity or affiliation such as a nationality, religious affiliation or ethnicity" (Ehlers et al., 2013, p. 180.) The effects of historical trauma, which include increased substance abuse and increased rates of depression, are being passed down through the generations (Ehlers et al., 2013).

Breastfeeding clearly benefits infants and mothers, so it is vital to promote breastfeeding within the Indigenous community to enhance early childhood health and family bonding. This scholarly effort was conducted to develop an evidence-based strategy to promote breastfeeding within the Native American population.

Purpose

Low rates of breastfeeding within the Indigenous population need to be addressed in order to improve the overall health of the Indigenous community. The benefits of breastfeeding have been well documented in relation to not only the health of the infant but the health of the mother as well. The Indigenous population continues to have a high incidence of diabetes mellitus due to high rates of obesity, inactivity and poor nutrition (Poudel, Yi Zhou, Story & Li, 2018).

The conceptual framework of the Interactive Theory of Breastfeeding relates well to the disparities that exist within the Indigenous community. The direct influence of stress and time is a factor within the lives of Indigenous mothers with limited resources and support to breastfeed. Historical trauma has greatly affected the role of Indigenous mothers, body image perception and organizational systems that offer protection, promotion and support (Ehlers et al., 2013). With support being an effective measure to increase breastfeeding rates, health providers that work

within Indigenous communities need better resources to provide culturally considerate support to increase breastfeeding initiation and duration rates (Flannery, 2015).

The purpose of this project was to define the scope of the problem of low breastfeeding rates among Indigenous mothers and to create an evidence-based educational toolkit for healthcare providers to deploy in the effort to promote breastfeeding in the Indigenous communities. The conceptual framework of the Interactive Theory of Breastfeeding guided collection of evidence related to potential barriers to breastfeeding within the Indigenous community and for creating the educational materials to meet the goal of improving breastfeeding rates within this population.

Significance

Health disparities exist within the Indigenous community with limited research available related to Indigenous breastfeeding behaviors and effective measures to increase initiation and duration rates. (Rhodes, Hellerstedt, Davey, Pirie & Daly, 2008). Barriers to support, access and education are noted as influencing breastfeeding rates in the Indigenous population (Ehlers et al., 2013). Although support is noted as an effective measure, Indigenous families may be in favor of breastfeeding but also show ambivalence to formula feeding (Eckhardt et al., 2014). Access to lactation counselors and resources contributes to the disparity which results in mothers having a gap in knowledge related to breastfeeding benefits and when to start solid foods (Eckhardt et al., 2014).

Breastfeeding can address many of the health issues currently affecting the Indigenous population including diabetes, obesity, breast cancer and cardiovascular disease. Equally as important is the possibility that breastfeeding may also help to heal the effects of historical trauma. Breastfeeding is a cultural tradition and reclaiming cultural traditions is an important step in cultural preservation.

Nursing research should continue to address health disparities by finding effective measures to overcome barriers to breastfeeding with the Indigenous population. Healthcare professionals need to use effective patient education and interventions to engage the population, overcome social determinants of health to increase breastfeeding rates. By applying the Theory of Breastfeeding to overcome breastfeeding disparities and barriers within the Indigenous community we can develop a tool that is applicable to clinical practice (Primo & Brandão, 2017).

Theoretical Framework

The Interactive Theory of Breastfeeding was created based on King's Conceptual System to describe and explain factors that may affect breastfeeding consistent with social determinants of health models (Primo & Brandão, 2017). The purpose of the Interactive Theory of Breastfeeding is to closely examine factors that affect the breastfeeding dyad. Primo and Brandão (2017) describe the following theoretical concepts of the Interactive Theory of Breastfeeding:

> mother-child dynamic interaction; woman's biological conditions; child's biological conditions; woman's perception; child's perception; woman's body image; space for breastfeeding; mother's role; organizational systems for the protection, promotion and support of breastfeeding; family and social authority; woman's decision making; stress; and time of breastfeeding. (p.1193)

Breastfeeding is described as occurring at the breast, directly to the child, and is considered to be an interactive process (Primo & Brandão, 2017). The goal of this interactive process is to obtain the benefits of breastfeeding and is influenced by the mother and child relationship as well as their relationship with environmental factors (Primo & Brandão, 2017). The Interactive Theory of Breastfeeding notes that the most direct barrier on the mother and baby's ability to successfully breastfeed is stress and time (Primo & Brandão, 2017). The

mother-baby dyad's ability to breastfeed is also directly influenced by the biological conditions of mother and infant, perceptions and the woman's decision making (Primo & Brandão, 2017). The mother's role, space for breastfeeding, the woman's body image, the family and social authority and the organizational systems for protection, promotion and support can also affect breastfeeding initiation, duration and exclusivity as noted in Figure 1 (Primo & Brandão, 2017).

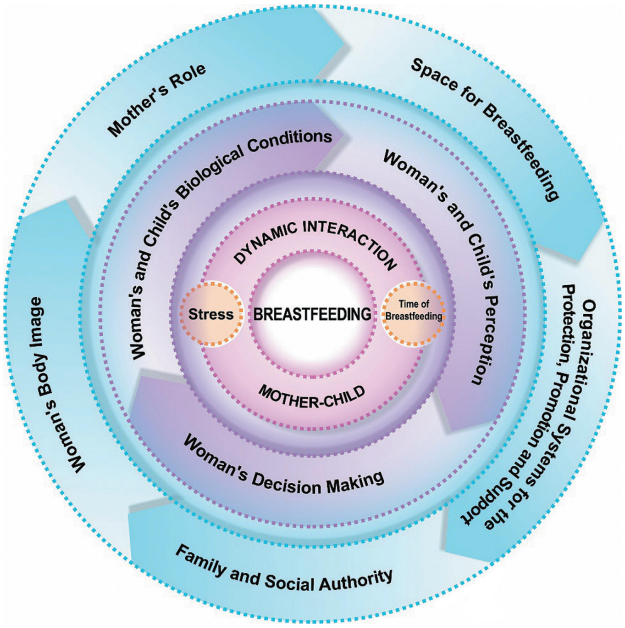

Figure 1. The Interactive Theory of Breastfeeding Model (Primo & Brandão, 2017). Used with permission from C. C. Primo (February 27, 2019)

The Interactive Theory of Breastfeeding was designed for nurses and other healthcare professionals to use in a variety of settings to protect, promote and support breastfeeding (Primo & Brandão, 2017). The theory is applicable in addressing the barriers that are negatively affecting breastfeeding rates in the Indigenous population. At the center of the model we have breastfeeding, with the Indigenous mother and child in dynamic interaction at the next circle. It's the next tier within the circle where we start to see the effects of biological conditions, perception and decision making, such as the woman's breast anatomy, the infant's anatomy as it relates to the ability to breastfeed and the effects of perception related to life experiences. All of

which are affected by the outer circle of influence that includes family and social authority, organizational systems, body image, mother's role and space for breastfeeding (Primo & Brandão, 2017).

The middle circle involves the biological processes of the woman and the child, the perceptions of both and the woman's decision making (Primo & Brandão, 2017). Although biological processes are innate, social determinants of health can affect perceptions related to the ability to breastfeed, milk supply and effectiveness of infant receiving the breastmilk. Within the Indigenous population, messages about self-worth may greatly influence the woman's decision to initiate breastfeeding. Historical trauma and social determinants of health have affected generations of Indigenous peoples' perceptions of self-worth and ability. Boarding schools systematically broke family bonds and stopped cultural practices including child rearing and feeding practices (Dodgson & Struthers, 2003). Perceptions of the breastfeeding experience may be linked to generations of negative messaging with a loss of the tradition of learning from mothers and grandmothers (Dodgson & Struthers, 2003).

Organizational Systems for the Protection, Promotion and Support includes the family, community and society as factors that may influence the goal of protection, promotion and support of breastfeeding (Primo & Brandão, 2017). Family and Social Authority is described as an interactive process of those involved in the breastfeeding process and that may influence the woman's behavior in relation to breastfeeding (Primo & Brandão, 2017). Social networks are an important factor of support within the Indigenous population, but family and social support can be inconsistent while living in stressful conditions (Eckhardt et al., 2014). Space for breastfeeding and organizational systems that protect, promote and support breastfeeding may not be available due to disparities in healthcare. Indigenous women have shared experiences of a lack of breastfeeding resources within the community, including a lack of support from lactation

consultants while at the hospital (Eni, Phillips-Beck & Mehta, 2014). The negative impact of boarding schools has persisted with trauma from abuse affecting body image which present in the outer circle, has an effect on the breastfeeding dyad (Eni et al., 2014). Breastfeeding AI/AN mothers benefit from community health education programs that protect, promote and support breastfeeding (Houghten & Graybeal, 2001).

Process

The databases searched for this project included CINAHL, Medline (PubMed), PsychINFO and Cochrane. Key words for the search of CINAHL without a field option included "Native American" AND "Indigenous" AND "breastfeeding" AND "support". The search was narrowed to articles within the timeframe 2013-2018, with the location of United States. This process resulted in 13 articles of value. The search in PubMed, using the MeSH terms "Indigenous" AND "Native Americans" AND "breastfeeding" resulted in 138 articles of which 26 were relevant articles retained for analysis. The search was expanded in PubMed by adding the word "support" , resulting in six additional articles, which were more specific to the topic. No date limitation was applied to this portion of the search process because articles related to historical trauma or cultural perspectives were relevant to the purpose of this project.

PsychINFO was the third data based searched for this project. This data base was chosen because the topic involves exploration of behavioral influences of breastfeeding within the Native American population. Key words in PsychINFO, search with no field options were, "Native American" AND "breastfeeding" resulted in two relevant articles not identified searches of other data bases. A search of the Cochrane Database was the final phase in gathering data for this project. Key search words used in the Cochrane Database were "breast feeding" AND "Native American" based on pull-down text options and narrowed the search further to "Title, abstract, key words." This search resulted in three articles, none of which were useful to the

literature review underpinning the purpose of this project. The final tally of the literature search concluded with 39 relevant articles to analyze for the purposes of this project.

Literature Review

This literature review explored research that offered effective ways to promote breastfeeding within the Indigenous population and potential barriers to breastfeeding. Articles retained for this review represented both qualitative and quantitative evidence, primarily from nursing.

This literature review explored research that offered effective ways to promote breastfeeding within the Indigenous population and potential barriers to breastfeeding. Articles retained for this review represented both qualitative and quantitative evidence, primarily from nursing. The literature review is organized using the Interactive Theory of Breastfeeding model concepts to emphasize the relationship with the theory and research on Indigenous breastfeeding patterns, starting with the outer circle of influence (Primo & Brandão, 2017).

Organizational Systems for the Protection, Promotion, and Support of Breastfeeding

Family, community and society are factors that may influence the goal of protection, promotion and support of breastfeeding (Primo & Brandão, 2017). Abbass-Dick et al. (2018) conducted a qualitative study to get feedback from an Indigenous community to create culturally relevant eHealth resource to promote breastfeeding. Phase 1 participants consisted of 11 mothers, two were pregnant, nine had breastfed, from a variety of Indigenous communities. Mothers stated support to breastfeed came from family members and partners (Abbass-Dick, et al., 2018). Nine mothers reviewed the generic eHealth resource and provided feedback using a data collection tool. Phase 2 participants were nine committee members that reviewed the generic eHealth resource and provided feedback during meetings or over the phone. Phase 3 participants included five of the mothers from Phase 1, five mothers new to the study, and six of the

committee members from Phase 2. The eHealth resource was designed and updated according to feedback provided in the study. Feedback from the mothers and committee members suggested that the resource was culturally relevant with the use of photos, backgrounds and colors but could be improved by using Indigenous drumming for the music, including input from elders or other tribal members, and ensuring that family members input is reflected within the resource (Abbass-Dick, et al., 2018). This study supported the idea of breastfeeding education being a community process and including culturally significant aspects, such as, the voices of elders, input from family and using songs and visual symbols meaningful to the specific indigenous population.

Black, Godwin and Ponka (2008) conducted a retrospective study that reviewed medical charts of women that gave birth from 1997-2003 at the Weeneebayko General Hospital in Moose Factory, Ontario to identify socioeconomic circumstances that effect breastfeeding rates in the James Bay Cree population. There were 903 eligible charts and out of those, 297 were randomly chosen for review (Black et al., 2008). Breastfeeding initiation rates were 51.9% compared to Canada's national rate of 78%. The following factors had negative influence on the mothers' decision to breastfeed: age of mother; mothers that smoked; education status of lower than 12th grade; those living within the communities of Moose Factory or Moosonee and marital status of single (Black et al., 2008). This study indicated that community is a major factor in influencing a mother's decision to breastfeed and can be either positive or negative (Black, et al., 2008). The conclusions that Black et al. (2008) made that being outside one's community negatively influenced women's choice to breastfeed aligned with that of other researchers (Abbass-Dick et al., 2018). Removing women from their communities is counter-productive and interrupts cultural norms as community support is noted as an effective way to promote, support and protect breastfeeding (Abbass-Dick et al., 2018).

England (2017) discussed the Baby-Friendly hospital initiative within the Indian Health Services (IHS) hospital system. This initiative began with Michelle Obama's *Let's Move!* Campaign and focused on reducing childhood obesity by promoting breastfeeding within the Indigenous communities (England, 2017). Indian Health Services tracked Baby-Friendly data including exclusive breastfeeding rates and childhood obesity through BMI (England, 2017). England (2017) noted that Indian Health Services was aware of the long-standing impact of historical trauma and how it relates to breastfeeding as many parents do not have a recent history of breastfeeding in the family or knowledge of this practice being passed down from grandmothers. Historical trauma, poverty issues and families fearing that their children will be taken away lead to a distrust of the medical community (England, 2017). England (2017) stated that IHS is making breastfeeding education and promotion a high priority that focuses on prevention and has a positive impact on future generations.

Schwartz et al. (2015) conducted quality improvement project to develop and pilot a 10-step clinic breastfeeding support strategy (Schwartz et al., 2015). Primary care clinics were provided resources, training and technical assistance to help facilitate best-practice policy and environmental changes to improve clinic breastfeeding support (Schwartz et al., 2015). Applications were accepted from clinics serving primarily communities of color, following the guidelines from the CDC grant (Schwartz et al., 2015). Using a competitive Request for Application (ROA) process, 8 health centers serving primarily Latino and Native American clients were selected according to criteria and decision matrix provided by the CDC grant (Schwartz et al., 2015). A self-assessment questionnaire was used to get baseline data on clinics for policy implementation and to develop a scoring system for a statewide recognition program (Schwartz et al., 2015). Trainings included 3 in-person sessions; the first, focusing on the 10-step framework, the second focused on self-assessment baseline scores and billing for lactation

support, the third focused on staff attending a full-day clinical skills course on "Managing Early Breastfeeding Challenges" (Schwartz et al., 2015). Technical assistance included 2 site visits and the state project team was available throughout the project for technical assistance including providing an implementation toolkit as well as other resources (Schwartz et al., 2015).

The pilot demonstrated that clinics can successfully implement a QI project to apply the Ten Steps to a Breastfeeding-Friendly Community Health Center and that it is an effective way to provide continuity of care for breastfeeding mothers and infants following hospital discharge (Schwartz et al., 2015). All clinics increased the number of Steps to a Breastfeeding- Friendly Community Clinic over the 6-month implementation period (Schwartz et al., 2015). Training on using cultural aspects for Native American clients included breastfeeding education sessions that were culturally tailored by the chair of the Native American Breastfeeding Coalition focusing on historical trauma (Schwartz et al., 2015). One clinic implemented a Breastfeeding Talking Circle to provide a traditional form of listening and communicating as a way of using traditions to promote breastfeeding (Schwartz et al., 2015).

Family and Social Authority

Family and social authority includes the values and backgrounds of those involved in the breastfeeding process (Primo & Brandão, 2017). Banks (2003) presented a culturally based support program based on an initial study of breastfeeding trends within the community. The goal of the program was to "establish a core group of successful breastfeeding women" and "raise community awareness" (Banks, 2003, p. 345). The idea for a breastfeeding group developed into support provided by a well-respected, bilingual Indigenous grandmother that led the efforts to promote and protect breastfeeding in the Kanesatake community with a population of 1500. The role of this support person was to dispel myths, to meet with all prenatal clients and attend all deliveries to help initiate breastfeeding within the first hour postpartum (Banks, 2003).

Raising community awareness began with community education which included breastfeeding articles in the community newspaper, breastfeeding education in the school systems starting in elementary school, local healthcare professionals were educated about the community's goal to increase breastfeeding rates and informed about the support program available (Banks, 2003). Cultural learning included a talking circle that was established for elders to dispel myths and learn new ways to help young mothers (Banks, 2003). The program was initiated in 1995 with a birth rate of about 15 births per year (Banks, 2003). By 2001, 75% of babies were receiving breastmilk the first week of life, showing a 43% increase and by four months of age, 42% were still being breastfed, showing a 23% increase (Banks, 2003). This study is another example of the effectiveness of education when provided in a culturally appropriate way which can break down barriers to learning and making behavior changes.

In a qualitative study to describe traditional Ojibwe infant feeding practices and the historical influences on those practices Dodgson and Struthers (2003) found similar negative influences related to historical and social changes. Recorded unstructured in-person interviews took place with each participant focusing on questions about breastfeeding experiences, traditions and historical influences (Dodgson & Struthers, 2003). Qualitative data were gathered from reservation archives at the University of Minnesota's Historical Society's Research Center to provide more information on cultural practices and history (Dodgson & Struthers, 2003). Two Indigenous women knowledgeable in Ojibwe culture were selected to review results for cultural accuracy. The study revealed that historically the Ojibwe had knowledge of lactation and its effects on postpartum hemorrhage, child spacing and infant health (Dodgson & Struthers, 2003). Traditional feeding practices included nursing on demand, baby wearing using cradleboards, child led weaning and wet nursing (Dodgson & Struthers, 2003). Maternal diet adjusted for lactation and use of herbal remedies were common (Dodgson & Struthers, 2003). Breastfeeding

women were given a special status within the tribe as breastmilk is considered a gift and a medicine from mother to child (Dodgson & Struthers, 2003).

The researchers found that traditional practices, including breastfeeding, were discouraged by health care providers (Dodgson & Struthers, 2003). The traditional roles of Indigenous women were purposely interrupted by forced assimilation by U.S. government policies (Dodgson & Struthers, 2003). This process isolated women and broke the oral traditions of passing down information to each other as families became separated (Dodgson & Struthers, 2003). The BIA relocation policies affected breastfeeding rates as tribal members were again separated from their communities and began to value assimilation over tradition choosing to formula feed their infants as a way of fitting in with their new community (Dodgson & Struthers, 2003).

Rhodes, Hellerstedt, Davey and Daly (2008) examined attitudes, health behaviors and social support related to breastfeeding initiation and duration in a Minnesota based American Indian population. Their qualitative study summarized the most significant factors that affected breastfeeding initiation and duration rates (Rhodes et al., 2008). Interviews were conducted with a convenience sample of 408 pregnant women with 380 participants completing reliable interviews for the prenatal interview (Rhodes et al., 2008). For the 2-weeks postpartum interview, 342 participants completed the interviews and 256 participants completed interviews at the 6-month survey (Rhodes et al., 2008). Research nurses interviewed women individually at healthcare facilities during last trimester of pregnancy, then at 2 weeks postpartum and 6 weeks postpartum (Rhodes et al., 2008). Participants completed the interview with the research nurse, a self-administered survey and received a small cash incentive at each visit (Rhodes et al., 2008). The prenatal survey had 19 questions about attitudes towards breastfeeding, 3 about social support and several questions about risk factors, traditional medicine and demographics (Rhodes

et al., 2007). The postpartum surveys included questions about the infant, feeding practices and support (Rhodes et al., 2008).

The six variables associated with breastfeeding initiation were; encouragement to breastfeed by husband/boyfriend, encouragement to breastfeed by mother, agreement with the 6 stated health benefits of breastfeeding, agreement with the affective benefits of breastfeeding, maternal education beyond high school and the study infant being the only child in the household (Rhodes et al., 2008). Five variables were associated with breastfeeding at 2 weeks postpartum; encouragement to breastfeed by husband/boyfriend, encouragement to breastfeed by mother, agreement with the 6 stated health benefits of breastfeeding, agreement with the affective benefits of breastfeeding and no maternal smoking in last 7 days (Rhodes et al., 2008). After multivariable analysis, however, encouragement from the mother was the only significant variable to breastfeeding at 2 weeks postpartum (Rhodes et al., 2008). At 6 months postpartum there was a six-fold increase in breastfeeding with the reported use of traditional medicine (Rhodes et al., 2008). Additionally, breastfeeding at 6 months was associated with no maternal smoking for past 7 days (Rhodes et al., 2008). Efforts that encouraged the use of traditional practices and breastfeeding education that included the woman's mother and/or husband/boyfriend improved breastfeeding rates of initiation and duration (Rhodes et al., 2008).

Mother's Role

The mother's role is how the woman is expected to behave as a mother, including her breastfeeding relationship with her child (Primo & Brandão, 2017). Eni, Phillips-Beck and Mehta (2014) collected quantitative data using a survey on demographics and feeding practices to gather information on First Nations women and breastfeeding to understand the challenges, experiences and strengths. Focus groups in British Columbia, Manitoba and Ontario occurred over a period of one year with a final sample size of 65 women representing seven First Nation

communities (Eni et al., 2014). Three themes emerged: Social factors, breastfeeding environments and intimacy (Eni et al., 2014). The participants stated that social factors included breastfeeding imagery portrayed as tranquil versus the reality of feeling the pull of many responsibilities, dealing with stressors such as poor-quality housing, drugs/alcohol, unemployment and violence (Eni et al., 2014). Disparities with breastfeeding education were illuminated and participants stated a need for realistic advice, such as experiencing pain may be a part of the experience but it's temporary (Eni et al., 2014).

The role of motherhood was another theme that emerged and included putting family and children before oneself, postpartum sadness and attachment in relation to feeding choice (Eni et al., 2014). Women stated that viewing their role as a mother within the context of their cultural practices and traditions helped to normalize and increase acceptance of the demands of motherhood (Eni et al., 2014).

Community acceptance of breastfeeding was noted to be a great influence on the mother's decision to breastfeed (Eni et al., 2014). In Indigenous communities where breastfeeding was accepted and encouraged, women were more likely to choose breastfeeding, have longer duration rates and feel more supported (Eni et al., 2014).

Woman's Body Image

A woman's body image is described as how she views her body while breastfeeding and the reaction of others to her breastfeeding body (Primo & Brandão, 2017). A woman's sense of body image was greatly impacted by the sexual objectification of women's bodies, negative messages about one's body while living at residential schools and a history of physical and sexual trauma (Eni et al., 2014). Women shared stories of feeling shame while breastfeeding as family members would encourage them to cover up or that it was rude to expose the breast while breastfeeding their infant (Eni et al., 2014). Historical trauma at boarding schools and cultural

loss has had a direct impact on breastfeeding initiation rates and duration. Participants discussed the perception that one's body is not capable of feeding/nurturing a child and that a healing of the spirit needed to occur in order to overcome the impact of the trauma (Eni et al., 2014). Teen moms stated that they were viewed as not capable of caring for infant, let alone breastfeed their child (Eni et al., 2014).

Breastfeeding environments were also noted to have an impact on breastfeeding and included co-sleeping, smoking, evacuation practices unique to this community, and the role of fathers (Eni et al., 2014). Mothers that chose to breastfeed stated that they also practiced co-sleeping (Eni et al., 2014). These mothers stated they felt more secure with the baby sleeping with them because it was easier to breastfeed, and it was a natural to do so (Eni et al., 2014). Women who smoked were less likely to breastfeed and gaps in knowledge about the safety of breastfeeding as a smoker existed (Eni et al., 2014). First Nation women in Canada were subject to policies that led to the practice of evacuating women to give birth away from their home communities, sometimes being away for 2-8 weeks at a time (Eni et al., 2014). It was noted that this practice negatively impacted breastfeeding initiation rates due to the stressful and unsupportive environment the mothers experienced while being away from home (Eni et al., 2014).

Fathers that supported breastfeeding, shared in the childbirth experience and provided physical and emotional support had a positive impact on breastfeeding rates (Eni et al., 2014). Participants indicated that peer support, home visiting programs , paternal grandmothers also helped with initiation and duration rates (Eni et al., 2014). Culturally sensitive support using traditional teachings were found meaningful by participants and positively influenced breastfeeding rates when breastfeeding education was provided to the mother and the community (Eni et al., 2014).

Women's Decision Making

A women's decision making process is described in the Interactive Theory of Breastfeeding as the process in which a woman chooses to breastfeed (Primo & Brandão, 2017). In a qualitative study by Eckhardt et al. (2014), 575 mother-child dyads from five different Northwest American Indian tribes enrolled in the Prevention of Toddler Overweight and Teeth Health Study (PTOTS) were recruited and eligible to complete surveys to increase knowledge related to influences that may affect decisions regarding infant feeding. Of those 575 eligible participants, 438 completed a 42- question survey that included questions about knowledge, attitudes and beliefs about infant feeding and physical activity (Eckhardt et al., 2014). Findings from this study identified gaps in Indigenous women's knowledge related to the benefits of breastfeeding and when to start solid foods. Women stated that their social networks supported breastfeeding, but the findings also concluded that those support people often had an ambivalence about formula feeding (Eckhardt et al., 2014). The conclusions of this study supported the need for more breastfeeding education within the Indigenous population to increase knowledge about the benefits of breastfeeding and when to start solid foods (Eckhardt et al., 2014). Eckhardt et al. (2014) indicated that more research to support what is effective in educating the population was also needed.

Hoffhines et al. (2014) presented a controlled trial study without randomization designed to reduce the high prevalence of diabetes in the American Indian population by designing a maternal education program to improve infant nutrition. Breastfeeding reduced the risk of childhood obesity and diabetes, and diabetes type 2, all of which have high rates within the population and many tribes are working to increase breastfeeding rates (Louis-Jacques et al., 2017). The maternal education program focused heavily on breastfeeding education starting prenatally to encourage breastfeeding initiation and sustain duration as an intervention

(Hoffhines et al., 2014). The study was conducted from 2006-2008 and began with a survey based on National Feeding in Infants and Toddlers (Hoffhines et al., 2014). Interventions included a certified lactation specialist conducting breastfeeding education classes for prenatal clients and scheduled follow up visits with toddlers to offer continued nutrition education (Hoffhines, et al., 2014). Findings included an increase in breastfeeding initiation rates from 59% to 89%, duration of breastfeeding at six months from 23% to 35%, but a drop at 12 months from 13% to 12% (Hoffhines et al., 2014). The reasons for quitting breastfeeding given by the participants included lack of social support, low milk flow, problems with latch, work/school related issues, choosing not to breastfeed and a medical condition (Hoffhines et al., 2014). Participants identified barriers to breastfeeding as young maternal age, lack of breastfeeding education resources, and maternal support for continuation (Hoffhines et al., 2014).

Louis-Jacques, Deubel, Taylor and Stuebe (2017) conducted a literature review, which examined racial and ethnic disparities in infant feeding in the U.S. based on the Healthy People breastfeeding goals and current breastfeeding rates of American Indian/Alaskan Natives (AI/AN), Hispanic/Latina and non-Hispanic Black populations. They concluded that literature on AI/AN infant feeding infant feeding behavior was sparse (Louis-Jacques et al., 2017). Studies have focused on effective ways to increase breastfeeding rates and are linked to promoting traditional practices, tribal governments providing community support by implementing lactation policies and AI/AN communities creating breastfeeding coalitions (Louis-Jacques et al., 2017). Louis-Jacques et al. (2017) discussed the need to breastfeeding education with the AI/AN communities to include its relationship to diabetes prevention and reducing childhood obesity. Smoking and alcoholism deterred mothers from choosing to breastfeed and more patient education was needed in these areas in order for mothers to make the best choices for their infants (Louis-Jacques et al., 2017). For example, mothers that smoke were discouraged to

breastfeed, although research showed that breastfeeding is still preferable (Louis-Jacques et al., 2017).

Martens et al. (2016) conducted a retrospective cohort study using population-based databases of 334,553 deliveries during a period from 1987-2011 in Manitoba with 24 years of follow up for children born during this period developing diabetes. Breastfeeding initiation rates were associated with a reduced risk of diabetes in both the mothers and their offspring by 11-27% (Martens et al., 2016). Breastfeeding initiation before discharge from hospital was significantly associated with the reduced risk of diabetes for both mother and child, and there was an association between breastfeeding initiation and incidence of DM that was detected in First Nations and non-First Nations mothers with or without a history of GDM (Martens et al., 2016).

McQueen, Sieswerda, Montelpare and Dennis (2015) conducted a prospective cohort study to evaluate breastfeeding initiation, duration and exclusivity rates in Aboriginal women. The participants completed a baseline survey in the hospital and then answered follow up questions by phone at 4 weeks postpartum and at 8 weeks postpartum (McQueen et al., 2015). The Maternal Characteristics Questionnaire and the Breastfeeding Self-Efficacy Scale short form (BSES-SF) were used to evaluate breastfeeding outcomes among Aboriginal women and to explore what affects breastfeeding in the early postpartum period (McQueen et al., 2015). The researchers found that Aboriginal women are at greater risk for not initiating breastfeeding but that breastfeeding education that starts during the prenatal period when women are coming in for regular appointments can have a positive impact on initiation rates (McQueen et al., 2015).

McQueen et al. (2015). identified variables that may affect the decision to breastfeed and the rates of success with breastfeeding including household income, intended breastfeeding duration, plan to exclusively breastfeed, perception of meeting breastfeeding goals, and higher

breastfeeding self-efficacy (McQueen et al., 2015). McQueen et al. (2015) indicated that smoking and substance abuse were also a factor that negatively affected breastfeeding rates in their study. The research underpinned recommendations for breastfeeding education to include the benefits of breastfeeding, hospital practices to promote breastfeeding and encourage the use of support resources, such as, family, peer and community programs (McQueen et al., 2015).

Woman's Perception of Breastfeeding

A woman's perception of breastfeeding is structured by many factors including her knowledge, background, social and economic conditions and culture (Primo & Brandão, 2017). Perceptions of breastfeeding included knowledge of how it benefits her child health (Primo & Brandão, 2017). McIsaac, Moineddin and Matheson (2015) studied the effects of breastfeeding on the health of Indigenous people, with specific focus on how breastfeeding was preventative for Sudden Infant Death Syndrome (SIDS), gastrointestinal infection, respiratory tract infection and otitis media. Data sources for prevalence of breastfeeding included two surveys: the Canadian Community Health Survey and the First Nations Regional Health Survey (McIsaac et al., 2015). The study estimated that 24.3%-41.4% of gastrointestinal infections,13.8%-26.1% of hospitalizations from respiratory tract infections and 12.9%-24.6% of SIDS could be prevented with breastfeeding (McIsaac et al., 2015).

Summary

This literature review presented potential barriers for breastfeeding, as well as effective ways to promote breastfeeding within the Indigenous population. Barriers included distrust of medical providers, stress and trauma related to intergenerational historical trauma stemming from assimilation programs carried out by government agencies (Dodgson & Struthers, 2003; Eni et al., 2014). The literature recognized the impact of stress and returning to work or school on low breastfeeding rates among Indigenous families (Dodgson & Struthers, 2003; Eni et al.,

2014). Smoking and substance abuse were also noted as barriers to breastfeeding (Louis-Jacques et al., 2017; McQueen et al., 2015).

Effective support included providing culturally sensitive educational materials, including the community and family in the educational process and providing realistic advice (Abbass-Dick et al., 2018; Eni et al., 2014). Support at the time of delivery and within hospital systems providing birth services to Indigenous families was noted as an important strategy and included implementation of the Ten-Steps for Baby-Friendly Hospital Initiatives (England, 2017; Louis-Jacques et al., 2017; McIsaac et al., 2015; Karol, 2014). Culturally sensitive breastfeeding education that provides realistic advice was found to be effective in promoting breastfeeding with Indigenous families (Abbass-Dick et al., 2018; Eni et al., 2014). The implementation of breastfeeding friendly policies, educating tribal elders and promoting breastfeeding within the community were all noted to be effective means to improve breastfeeding rates (England, 2017; Louis-Jacques et al., 2017). Interventions that promoted, protected and supported breastfeeding prevented a significant proportion of infection and mortality in Canadian Aboriginal (First Nation, Inuit and Metis) infants, noting the support of Baby Friendly Hospital initiatives as an effective intervention (McIsaac et al,, 2015).

Gaps in research included limited research available on the feeding patterns of Indigenous people and disparities in breastfeeding education (Louis-Jacques et al., 2017; McQueen et al., 2015). Studies noted the limitations of research within one Indigenous community and its findings being applied to other Indigenous communities as there may be regional and traditional differences that must be addressed (Dodgson & Struthers, 2003).

Discussion

Interpretation

The purpose of this project was to define the scope of the problem of low breastfeeding rates among Indigenous mothers and to create an evidence-based educational toolkit for healthcare providers working with Indigenous communities. The main concepts of the Interactive Theory of Breastfeeding can help explain the barriers to breastfeeding within the Indigenous population noted in the literature and frame solutions to overcome those barriers (Primo & Brandão, 2017). The mother-child dyad needs effective support to reach their breastfeeding goal. Within the Indigenous population important elements of support include provision of culturally sensitive educational materials, encouragement of the mother's support people to participate in patient education and realistic advice from healthcare providers (Abbass-Dick et al., 2018; Eni et al., 2014). Healthcare providers are often responsible for developing breastfeeding support within the Indigenous population and this project provides evidence-based ideas to underpin this effort.

Primo and Brandão (2017) explained that a woman's perception of breastfeeding can be influenced by many factors including culture, knowledge, social and economic condition and emotions. Barriers to a women's perception of breastfeeding may be overcome by offering educational health campaigns that view breastfeeding as a cultural tradition (Dodgson & Struthers, 2003). It is common for Indigenous women to consult with elders, their mothers, aunts or grandmothers, and including these special support people at clinic visits can reinforce patient education (Abbass-Dick, et al., 2018; Eni et al., 2014). Therefore, it is essential that healthcare providers offer realistic advice that addresses what to expect in regard to pain, special circumstances or difficult situations was viewed as helpful (Eni et al., 2014).

Unfortunately, Indigenous women have commented that they do not see themselves represented within breastfeeding campaigns and that the imagery often romanticizes breastfeeding as calm and serene (Eni et al., 2014). Women's body image issues are one of the

factors that can greatly affect breastfeeding and are tied to historical trauma within the Indigenous community. Collaboration with mental health services may benefit prenatal clients and encourage women to heal old wounds that may affect their perception of their body and its capability to nurture their child. Breastfeeding education that uses imagery, cultural symbols and cultural ways to create a safe learning environment, such as, talking circles, is an effective way to share knowledge (Banks, 2003). When a community member can also act as a breastfeeding champion, the impact of support is even more powerful (Banks, 2003).

Reinforcing individual and family support of breastfeeding is only one step in creating a strong program to increase breastfeeding among the Indigenous people. Policy change and implementation is necessary to address barriers within organizational systems, family and social authority by integrating multi-level support (Louis-Jacques et al., 2017).

Outcome

This project utilized evidence from the literature review to create *Promoting Breastfeeding in an Indigenous Community: A Toolkit for Healthcare Providers* (See Appendix C). The toolkit format is framed by the Interactive Theory of Breastfeeding (Primo & Brandão, 2017). The toolkit is structured using the concepts from the Interactive Theory of Breastfeeding as a guide of potential barriers to consider and offers strategies to address those barriers. Indigenous imagery is used throughout the toolkit as a reminder to the healthcare provider of the importance to include cultural images and symbols. For each section, learning objectives are noted in order to guide the healthcare provider through the toolkit with the awareness of what is considered important for each section.

Promoting Breastfeeding in an Indigenous Community: A Toolkit for Healthcare Providers begins by explaining the purpose and importance of the toolkit (Meyer, 2019). This section presents the purpose of the toolkit and why the Interactive Theory of Breastfeeding was

selected to use for the toolkit. This introduction to the Interactive Theory of Breastfeeding outlines it's importance as a social determinants of health model designed to be used by nurse and other healthcare professionals (Primo & Brandão, 2017)..

Section 1 presents facts about breastfeeding. The two learning objectives include: (1) Be able to state what the recommendations are for breastfeeding at 6 months and beyond; and (2) Be able to state the benefits of breastfeeding for infant and mother. Information about breastfeeding recommendations are included as well as the benefits of breastfeeding for the infant and mother. The toolkit begins with the recommendations provided by the AAP (2018) and the WHO (n.d.) to give clear guidance as to what the expectations are for breastfeeding both worldwide and nationally. The purpose is to provide this basic breastfeeding information, including the benefits as a starting point for any healthcare provider. In a healthcare setting, particularly those that are in rural settings, healthcare professionals may include a wide variety of disciplines include physicians, nurses, community health care workers and breastfeeding peer counselors.

Section 2 presents breastfeeding rates for the Indigenous population, explained within the context of the effects of health disparities and social determinants of health. The two learning objectives for section 2 include: (1) Be able to explain why there is a disparity in breastfeeding rates for the Indigenous population; and (2) Be able to state what the current breastfeeding rates are for the Indigenous population. Once the healthcare provider has learned what the recommendations and benefits are for breastfeeding, it's important to now see what the disparities are for the Indigenous population (Houghton & Graybeal, 2001). Breastfeeding rates for the Indigenous populations are presented and disparities are explained (Meyer, 2019). Also included in this section are reasons why the mother may choose not to breastfeed (Meyer, 2019). This is important to note as there are unique considerations within the Indigenous population as noted in the literature review. Historical trauma is defined in section 2 and examples of how it

has effected the population are discussed. Historical trauma has greatly affected Indigenous women and their communities so it's vital that this information is included in order to broaden the understanding of the healthcare provider working in this setting (Ehlers et al., 2013).

Section 3, outlines ways to create a breastfeeding support program. Learning objectives include: (1) Be able to name several effective ways to provide breastfeeding support; and (2) Be able to explain why including community education is important. This section begins by listing several strategies based on the themes from the literature review emphasizing that effective breastfeeding support includes multi-level support that is community-wide (Eni et al., 2014). Next, seven steps are presented as a basic format to create a breastfeeding support program including: Assessment, educational materials, gathering local resources, policy implementation, creating lactation spaces, communication of breastfeeding policies and support, and evaluating and sustaining efforts (Meyer, 2019). This information is included so that healthcare providers are aware of the necessary steps that provide community-wide support. Barriers to breastfeeding are outlined using the concepts from the Interactive Theory of Breastfeeding (Primo & Brandão, 2017). Each concept is briefly described with examples of potential barriers and strategies to overcome those barriers (Primo & Brandão, 2017). Using a social determinants of health model aids healthcare providers in understanding how disparities continue to exist within the Indigenous population.

Dissemination of the outcome of this project was through a poster presented at Graduate Research Achievement Day at UND on March 7, 2019 (see Appendix B). The poster was also accepted for presentation at Research on the Green at Viterbo University on April 25, 2019.

Dissemination of the toolkit will begin with the Native Breastfeeding Coalition of Wisconsin. The coalition meets quarterly and is an appropriate venue for feedback as all Wisconsin Indigenous communities are represented. The toolkit will be presented for review and

feedback at the April 29, 2019 meeting. At this meeting I will present the toolkit and ask for verbal feedback for each section. It's important to me to first gather feedback from the local Indigenous community before initiating further dissemination of the toolkit. This process is culturally appropriate in showing respect for the community I live in within Wisconsin and hearing their perspective of what is being created (Eni et al., 2014; Louis-Jacques, Deubel, Taylor & Stuebe, 2017; Dodgson & Struthers, 2003).

Implications for Nursing:

Practice.

All Indian Health Services' (IHS) hospitals have achieved Baby Friendly certification between 2011-2014 (Louis-Jacques, Deubel, Taylor and Stuebe, 2017). The goals of the IHS Baby- Friendly Hospital Initiative are based on the Ten-Steps and include requirements for hospitals to implement a breastfeeding policy, train all staff to implement the policy, adapt maternity practices and initiate breastfeeding within 1 hour of birth (Karol, 2014). All of these factors help to improve breastfeeding rates, provide support to Indigenous families and help to decrease disparities. This movement began with the "Let's Move!" an Indian Country initiative that was a part of Michelle Obama's Let's Move initiative and focused on reducing childhood obesity rates (England, 2017). Indian Health Services is tracking breastfeeding data including exclusivity. IHS views breastfeeding as a prevention measure for reducing health risks and recognizes the need for more breastfeeding resources within Indigenous communities (England, 2017). Although this provides initiative has increased hospital-based support where the IHS hospitals are located, this does not reach all Indigenous communities and there are gaps in services to provide a continuity of care and support for breastfeeding once the mother is discharged home.

Providers should be aware of the increased incidence for not initiating breastfeeding and prioritize breastfeeding education during the prenatal period, welcoming all support people to participate in patient education related to breastfeeding (Abbass-Dick et al., 2018; Eni, Phillips-Beck, & Mehta, 2014; McQueen et al, 2015). Healthcare providers that work in an Indigenous should take time to establish trust with the community and their patients (Wilhelm et al., 2012). Providers can also encourage community education with emphasis on cultural considerations and refer to local resources when available (Abbass-Dick, et al., 2018; Banks, 2003). Healthcare providers that are working with Indigenous communities need to prioritize the community-based approach to reflect their understanding of the cultural significance of family (Dodgson & Struthers, 2003).

Education.

Because nurses are well-positioned to make an impact on breastfeeding efforts, nursing education would be enhanced by emphasizing effective strategies that address social determinants of health and development of cultural competency skills (Houghton & Graybeal, 2001). While most institutions do present the basics of social determinants of health and public health concerns, increasing these efforts would be beneficial. Case studies that outline the concerns of specific populations, such as the Indigenous population and lower rates of breastfeeding could be discussed within didactic lessons in order to expose students to evidence-based practices that meet the needs of specific populations. When students have an understanding of the social determinants of health they are better able to meet the needs of their patients with effective cultural competency skills (Louis-Jacques, Deubel, Taylor & Stuebe, 2017).

Policy.

Community health nursing programs can also work within the Indigenous setting to promote policies that support breastfeeding as another way to create breastfeeding friendly spaces for mothers to breastfeed (Louis-Jacques, Deubel, Taylor & Stuebe, 2017). Breastfeeding champions can be identified in the community and be helpful in making policy changes as well. Policy changes help to sustain efforts and justify the time healthcare providers spend with community education, patient education and policy building. Implementing breastfeeding policies can also help to justify resources allocated towards building lactation spaces and other breastfeeding efforts (Louis-Jacques, Deubel, Taylor & Stuebe, 2017). Nurses can take an active role in advocating for policy changes that effect breastfeeding locally as well as nationally, such as supporting paid maternity leave and Baby Friendly hospital certification (Louis-Jacques, Deubel, Taylor & Stuebe, 2017).

Research.

There are limited studies on breastfeeding and Indigenous feeding practices (Eni et al., 2014; Louis-Jacques, Deubel, Taylor & Stuebe, 2017). More research is needed to further explore traditional infant feeding practices, find what is working for Indigenous mothers and how healthcare professionals can help mothers meet their breastfeeding goals (Eni et al., 2014; Louis-Jacques, Deubel, Taylor & Stuebe, 2017; Dodgson & Struthers, 2003; Houghton & Graybeal, 2001). Additionally, more qualitative data would enhance knowledge about the experiences of Indigenous women with breastfeeding support and education in their communities (Louis-Jacques, Deubel, Taylor & Stuebe, 2017).

Further research is needed on how breastfeeding promotion is being sustained within Indigenous communities and what Indigenous mothers are needing to overcome barriers to breastfeeding. Indigenous specific breastfeeding data that tracks initiation and duration rates are limited (Banks, 2003). Additional research that tracks this data and what strategies were effective

to increase initiation and duration would be helpful in continuing to emphasize the importance of supporting breastfeeding for future generations of Indigenous people (Banks, 2003).

Summary

Potential barriers for breastfeeding, as well as effective ways to promote breastfeeding within the Indigenous population were present within the literature review. Barriers were heavily related to the effects of intergenerational historical trauma and included distrust of medical providers, stress and trauma (Dodgson & Struthers, 2003; Eni et al., 2014). The literature recognized the impact of stress and returning to work or school on low breastfeeding rates (Dodgson & Struthers, 2003; Eni et al., 2014). Effective strategies that emerged from the literature review to promote breastfeeding within Indigenous communities included increasing access to breastfeeding education, providing culturally sensitive educational materials, including the mother's support people in the educational process, increasing access to lactation services and connecting with tribal elders to promote community-wide educational campaigns (Eni et al., 2014; Louis-Jacques, Deubel, Taylor & Stuebe, 2017). Research highlighted the importance of building trust within the community and providing culturally competent care (Eni et al., 2014; Banks, 2003; Louis-Jacques, Deubel, Taylor & Stuebe, 2017). Although efforts to promote and support breastfeeding within Indigenous communities are present within IHS baby- friendly hospitals, they need to be expanded into community settings to provide continuity of care (Karol, 2014; England, 2017).

Healthcare providers can support breastfeeding efforts by providing realistic breastfeeding education, taking an active role in breastfeeding friendly support programs and building a trusting relationship with the community (Eni et al., 2014; Louis-Jacques, Deubel, Taylor & Stuebe, 2017). Indigenous leaders can support breastfeeding by promoting breastfeeding friendly policies that includes workplaces, schools and all tribal buildings.

Implementation of breastfeeding friendly policies not only supports current efforts but also establishes a way to sustain efforts (Eni et al., 2014; Louis-Jacques, Deubel, Taylor & Stuebe, 2017).

Social determinants of health models, like the Interactive Theory of Breastfeeding, assists healthcare providers in understanding the impact of barriers to healthcare, such as, breastfeeding (Eni et al., 2014; Primo & Brandão, 2017). Using a social determinants of health model to create a toolkit specific to supporting breastfeeding in Indigenous communities is one more step in promoting and supporting breastfeeding initiation and duration with the hopes to make an impact on the overall health of future generations (Eni et al., 2014).

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Appendix A								
Authors/ Publication Year	**Purpose**	**Design**	**Sample**	**Data Collection and Measurement**	**Findings**	**Strengths**	**Limitations**	**Level of Evidence**
Abbass-Dick, J., Brolly, M., Huizinga, J., Newport, A., Xie, F., George, S., & Sterken, E. (2018). Designing an eHealth breastfeeding resource with indigenous families using a participatory design. *Journal of Transcultural Nursing, 29* (5), 480-488.	The purpose of this study was to work with Indigenous community to create culturally relevant eHealth resource to promote breastfeeding.	Three-phase exploratory study to develop eHealth resource.	11 mothers and 9 committee members. Mothers qualified if they self-identified as Indigenous, were pregnant or had a child, had breastfed, were breastfeeding or planning to breastfeed, were literate and speak English, and had access to Internet. Committee members were eligible if they were healthcare providers that worked with the	Phase 1 participants consisted of 11 mothers, 2 were pregnant, 9 had breastfed, from a variety of Indigenous communities. Mothers stated support to breastfeed came from family members and partners. 9 mothers reviewed the generic eHealth resource and provided feedback using data collection tool. Phase 2 participants were 9 committee members that reviewed the generic eHealth resource and provided feedback during meetings or over the phone. Phase 3 participants included five of the mothers from Phase 1, five mothers new	The eHealth resource was designed and updated according to feedback provided in the study. Feedback suggested that the resource was culturally relevant with the use of photos, backgrounds and colors. Areas of improvement include using Indigenous drumming for the music, including input from elders or other tribal members, and ensuring the family members input is reflected within the resource.	Actively invited Indigenous people to provide input on the cultural relevance. Data collection included questions about ease of use of the resource. Data collection included questions about content and asked for suggestions about topics. The resource was edited according to the feedback provided.	Small study sample. Did not provide a source to view the eHealth resource. Did not have data yet to show effectiveness of eHealth resource.	Level VI: qualitative study

			Indigenous population providing breastfeeding education and support.	to the study, and 6 of the committee members from Phase 2. The participants provided feedback on the newly created eHealth resource for breastfeeding education and support.				
Banks, J. W. (2003). Ka'nistenhsera. teiakotihsnie's. A native community rekindles the tradition of breastfeeding. *AWHONN Lifelines, 7*(4), 340-347. doi:S1091-5923(15)30916-X [pii]	The purpose of this program was to increase breastfeeding rates within the Indigenous community	Interventions included establishing a group of successfully breastfeeding women and to raise community awareness.	A well-respected Indigenous grandmother that was bilingual lead the efforts to promote and protect breastfeeding in the community.	The role of the support person was to dispel myths, meet with all prenatal clients and attend all deliveries to help initiate breastfeeding within the first hour postpartum. Community awareness included breastfeeding articles in the community newspaper, breastfeeding education in the school systems starting in elementary, local healthcare professionals were educated about the community's goal to	Program initiated in 1995 and by 2001, 75% of babies were receiving breastmilk the first week of life, showing a 43% increase. By four months of age, 42% were still being breastfed, showing a 23% increase. Cultural values included wisdom from family members, sharing experiences and relating to each other's experiences. This type of learning was better received than more formal methods, such as, classes and presentations.	Program changed to accommodate the one person that showed interest in being the breastfeeding support person. Breastfeeding support person was provided training to support her role. Cultural was respected and education was encouraged to be respectful of cultural traditions.	Not a formal study. Explored sociocultural factors associated with low breastfeeding rates. Created a unique approach to address low breastfeeding rates. Data was promising and showed great increases in breastfeeding initiation and duration.	Level VI: qualitative study

				increase breastfeeding rates and the support program available. Talking circle was established for elders to dispel myths and learn new ways to help young mothers.				
Black, R., Godwin, M., & Ponka, D. (2008). Breastfeeding among the ontario james bay cree: A retrospective study. *Canadian Journal of Public Health = Revue Canadienne De Sante Publique, 99*(2), 98-101.	The purpose of this study was to identify socioeconomic circumstances that effect breastfeeding rates in the Cree population.	Retrospective study that reviewed medical charts of women that gave birth from 1997-2003 at the Weeneebayko General Hospital in Moose Factory, Ontario.	There were 903 eligible charts and out of those, 297 were randomly chosen for review.	Review included using SPSS version 14.0 for analysis. Parity, home community and education level were grouped for analysis. Breastfeeding at discharge was the dependent variable.	Initiation rates were 51.9% compared to Canada's national rate of 78%. The following were factors that influenced a mother to not breastfeed: age of mother; young mothers including teens; mothers that smoked; education status of lower than 12th grade; those not living within the communities of Moose Factory or Moosonee and marital status of single.	The study gained access to a large sample of charts and used concrete methods for evaluation. Noted the importance of promoting breastfeeding within the community as the community has such an impact on mothers.	Limitations included that smoking is very common within the Cree population, with a rate of 52.1% of the charts reviewed. When regression analysis was completed with the smoking variable, it was proven to not be such a significant factor. The limitation of time was noted. The study only had 2 months to do the review and with more time, more charts could be reviewed. Study only reviewed initiation rates and was not able to review duration rates.	Level II: Retrospective study

Dodgson, J., & Struthers, R. (2003). Traditional breastfeeding practices of the ojibwe of northern minnesota. *Health Care for Women International, 24*(1), 49-61. doi:DPCHXAAQC3KU73B2 [pii]	The purpose of this study was to describe traditional Ojibwe infant feeding practices and how historical influences have affected those practices.	Ethnographic approach used to learn more about the breastfeeding practices of the Ojibwe people in Northern MN.	Urban indigenous population in Minneapolis, MN and three rural reservation sites. Sample size was 44 Ojibwe women. The intention was to have a wide range of representation within the tribal affiliation; socioeconomic, occupation, age and varying degrees of heritage.	Recorded unstructured in-person interviews with each participant focusing on questions about breastfeeding experiences, traditions and historical influences. Qualitative data were gathered from reservation archives at the University of MN Historical Society's Research Center to provide more information on cultural practices and history. Data analysis software was used to analyze the data according to an ethnographic approach. Two native women knowledgeable in Ojibwe culture were selected to review for cultural accuracy.	Historical and social changes: forced assimilation, health care services provided by non-Native providers and urbanization. Boarding schools, BIA polices that promised jobs and resources to indigenous people willing to relocate to urban areas and class distinctions related to assimilation. Ojibwe culture: Women's roles: were not rigid, grandmothers considered wise and powerful and often consulted, and extended family was common. Health beliefs: Balance between self, others and environment is needed for optimal health. Traditional healers are consulted for healing. Western medicine is considered to address the body only and not in a holistic manner. Traditional feeding practices: Ojibwe had knowledge of	Provided first-hand knowledge of traditional breastfeeding practices of the Ojibwe. Utilized cultural experts to review findings for cultural accuracy. Provided specific examples of how history has affected the breastfeeding dyad. Findings can be used to educate others that provide care to Ojibwe people.	Small study sample of 44. 8 of the 44 did not breastfeed or it was unknown if they did. 12 of 44 of the sample had an education level of baccalaureate or higher, which was the most represented category.	Level VI: qualitative study

					lactation and its effects on postpartum hemorrhage, child spacing and infant health. Breastfeeding women were given a special status within the tribe. Breastmilk is considered a gift and a medicine from mother to child. Traditional feeding practices included nursing on demand, baby wearing using cradleboards, child led weaning and wet nursing. Maternal diet adjusted for lactation and use of herbal remedies were common.			
Eckhardt, C. L., Lutz, T., Karanja, N., Jobe, J. B., Maupome, G., & Ritenbaugh, C. (2014). Knowledge, attitudes, and beliefs that can influence infant feeding practices in	The purpose of this study was to increase knowledge related to influences that may affect Native Americans' decisions regarding infant feeding. The study focuses on	Mothers from five different Northwest American Indian tribes that were enrolled in the Prevention of Toddler Overweight and Teeth Health Study	575 mother-child dyads that were enrolled in PTOTS were recruited to participate. Participants were in their second or third trimester of pregnancy or postpartum up to 6	Participants completed a 42-question survey that included questions about knowledge, attitudes and beliefs about infant feeding and physical activity. The survey was completed on site, self-administered, with a PTOTS staff person available to answer any questions. Completed surveys	Findings include that Native American women have gaps in knowledge related to the benefits of breastfeeding and when to start solid foods. Women stated that their social networks supported breastfeeding, but the findings also concluded that there was an ambivalence about formula feeding. It was also	Used participants that were enrolled in PTOTS. Gained the support of tribal agencies. Ensured that a support person was available to answer questions while survey was being completed. 438 surveys completed.	Formal psychometric testing was not completed on the survey. Although they note that the surveys were checked for completion by staff, several participants missed one question due to placement on the survey and it had to be omitted.	Level VI: Qualitative study which gathers data on human behavior to understand why and how decisions are made (Fineout-Overholt, Melnyk, Stillwell & Williamson, 2010).

american indian mothers. *Jo urnal of the Academy of Nutrition and Dietetics, 1 14*(10), 1587-1593.	knowledge, attitudes and beliefs.	(PTOTS) were recruited to participate in the study.	months. 438 mothers completed surveys.	were mailed to the Northwest Portland Area Indian Health Board for data processing. Two questions were excluded from the final results due to one question being accidently missed by participants and the other had ambiguous wording. The authors do note a few limitations along with the omission of two of the questions. They note the limitation of effectiveness of using true/false and multiple choice questions. They also note that the succession of the questions may influence answers at the end of the survey.	noted that research related to what Native American mothers know and believe related to breastfeeding is limited.	Participating tribes partnered with the Northwest Portland Area Indian Health Board, the Kaiser Permanente Center for Health Research, and the National Heart, Lung, and Blood Institute. The questionnaire was revised three times and pretested.		
Ehlers, C. L., Gizer, I. R., Gilder, D. A., Ellingson, J. M., & Yehuda, R. (2013). Measuring	To use the Historical Loss Scale and the Historical Loss Associated Symptoms Scale to describe the extent of the	American Indian participant s were recruited from 8 different reservation sites and	306 American Indian adults participated and were assessed.	Data analyses were based on four goals of the study. Dependent variables were calculated. A multivariate model using Mplus v6.1 and a univariate	Thoughts about historical losses and associated symptoms are common. Presence of these thoughts is associated with high degrees of Native American Heritage/cultural	Strengths included using established scales for assessment. Thorough review and analysis of data.	Findings were varied for both Historical Loss Scales and demographics had a significant impact. Researchers determined that findings may be	Level IV: Cohort study

historical trauma in an american indian community sample: Contributions of substance dependence, affective disorder, conduct disorder and PTSD. *Drug & Alcohol Dependence, 133*(1), 180-187.	experience of loss and the feelings associated with the loss; to study the relationship of post-traumatic stress disorder (PTSD) diagnosis based on current events and how those feelings relate to frequency of thoughts/feelings related to historical events; to see if a relationship exists between Native American Heritage percentage/cultural identification and thoughts of historical loss and to explore the	assessed using the Semi-Structured Assessment for the Genetics of Alcoholism (SSAGA), the Historical Loss Scale, the Historical Loss Associated Symptoms Scale, the Stressful-Life-Events Scale and the Orthogonal Cultural Identification Scale.		regression model using SPSS Statistics v.20 were used to analyze data.	identification and substance dependence. Over half of the participants stated they thought about historical losses at least occasionally and it caused them stress. Logistic regression indicated significant increases in frequency of thinking about historical loss related to: not being married, high degree of Native Heritage and high cultural identification. Historical loss associated symptoms were related to anxiety/affective disorders and substance dependence.	Large sample population from 8 different sites.	greatly influenced by location of tribe/reservation and the specific historical losses of that tribe. Indicating upper Midwest reservation and Ontario, Canada populations show higher rates of thinking about Historical losses.	

	connection between substance abuse, affective/anxiety disorders, conduct disorder/antisocial personality disorder and thoughts of historical loss.							
Eni, R., Phillips-Beck, W., & Mehta, P. (2014). At the edges of embodiment: Determinants of breastfeeding for first nations women. *Breastfeeding Medicine, 9*, 203-214. doi:10.1089/bfm.2013.0129	The purpose of this study was to gather information on First Nations women and breastfeeding in order to understand the challenges, experiences and strengths.	Collected quantitative data using a survey on demographics and feeding practices.	Focus groups in British Columbia, Manitoba and Ontario over a period of one year. Sample size was 65 women representing seven First Nation communities.	Qualitative methodological technique was used to analyze data. Information was coded, categorized and organized according the emerging themes.	Three themes emerged: Social factors, breastfeeding environments and intimacy. Historical trauma including boarding schools, physical/emotional trauma, teen pregnancy and evacuation for childbirth are considered obstacles to breastfeeding.	4 of 6 researchers were Indigenous women. Specific examples of historical trauma were noted. The effects of evacuation for childbirth were discussed, which is unique to First Nations women. Special considerations with co-sleeping and culture were discussed. Teen mothers and breastfeeding challenges were discussed. A need for breastfeeding education to be more realistic was noted.	Limitations include that is it was a small sample size of 65 women for the long time period of one year.	Level VI: Qualitative study
Hoffhines, H., Whaley, K. D.,	The purpose of this study was to reduce	Conducted survey from 2006-	Survey was offered to parents of	Nutrient analysis software was used to analyze data.	Breastfeeding initiation rates increased to 89% from	Approved by IRB at Univ of Oklahoma Health Sciences Center,	More information is needed as to why the 12-month duration	Level III: Controlled trial

Blackett, P. R., Palumbo, K., Campbell-Sternloff, D., Glore, S., & Lee, E. T. (2014). Early childhood nutrition in an american indian community: Educational strategy for obesity prevention. *The Journal of the Oklahoma State Medical Association, 107*(2), 55-59.	the high prevalence of diabetes through the intervention of designing a maternal education program to improve infant nutrition. The intervention focused heavily on breastfeeding education to encourage breastfeeding initiation and sustain duration.	2008, based on National Feeding in Infants and Toddlers and based on results implement an interventio n. Interventio n included a certified lactation specialist conducting breastfeedi ng education classes for prenatal clients and follow up visits with toddlers.	tribal affiliated toddlers aged 12 to 36 months and their siblings. Recruitment continued until there were 100 participants. Final sample size was 94 participants.		59%. At six months 35% from 23% and 12% at 12 months from 13%. Reasons for quitting breastfeeding: lack of social support, low milk flow, problems with latch, work/school related issues, choosing not to breastfeed and a medical condition. Barriers included: young maternal age, lack of breastfeeding education resources, and maternal support for continuation.	the Oklahoma City Area Indian Health Services and the Southwest Intertribal Health Board. Certified Lactation Specialist offered the breastfeeding education. Initiation rates increased.	rate decreased from 13% to 12% while the initiation rates and 6 month rates showed increases. 40% of the participants chose “no response” for the question about why they quit breastfeeding. Tribal members live in rural location and some resources may be limited due to location as well as heritage.	without randomization.
Louis-Jacques, A., Deubel, T. F., Taylor, M., & Stuebe, A. M. (2017). Racial and ethnic	This literature review examines racial and ethnic disparities in infant feeding in the U.S. based on the	Literature review will focus on maternal and infant health outcomes associated with	Not applicable.	Not applicable.	Literature on AI/AN infant feeding behavior is sparse. Promoting traditional practices may help increase BF rates.	Provided overview of breastfeeding rates in AI/AN population. Provided concrete examples of successes that can be implemented in tribal communities.	Did not discuss how the literature review was conducted.	Level V: Systematic review of studies

disparities in U.S. breastfeeding and implications for maternal and child health outcomes. *Seminars in Perinatology, 41*(5), 299-307.	Healthy People breastfeeding goals and current breastfeeding rates of American Indian/Alaskan Natives, Hispanic/Latina and non-Hispanic Black populations.	breastfeeding, existing racial and ethnic disparities within breastfeeding rates and best practices to increase breastfeeding success.			Tribal governments can provide community support by implementing lactation policies. AI/AN communities can create support by initiating breastfeeding coalitions. Indian Health Services' hospitals are all Baby Friendly achieving certification between 2011-2014. Breastfeeding reduces the risk of childhood obesity and diabetes, and diabetes type 2, all of which have high rates within the population. Smoking and alcoholism rates may deter mothers from choosing to breastfeed.			
Martens, P. J., Shafer, L. A., Dean, H. J., Sellers, E. A. C.,	The purpose was to examine the relationship between	A retrospective cohort study that included	Sample size was 334, 553 deliveries which	An administrative database was used to perform the retrospective cohort study.	Breastfeeding initiation rates were 83% in non-First Nation mothers and	Study was approved by the Health Information Research Governance Committee of the Assembly of Manitoba	Duration rates were not able to be studied because they are not tracked in Canada databases.	Level IV: cohort study

Yamamoto, J., Ludwig, S., . . . Shen, G. X. (2016). Breastfeeding initiation associated with reduced incidence of diabetes in mothers and offspring. *Obstetrics & Gynecology, 128*(5), 1095-1104.	breastfeeding initiation and diabetes in First Nations and non-First Nations mother and their offspring.	334,553 deliveries during a period from 1987-2011 in Manitoba with 24 years of follow up for diabetes using population-based databases.	excluded 12, 597 births due to the diagnoses of pre-pregnancy diabetes or no breastfeeding data.	Kaplan-Meier survival analysis was used to estimate the proportion of women and offspring that developed diabetes.	56% in First Nation mothers. Breastfeeding initiation rates are associated with a reduced risk of diabetes in both the mothers and their offspring by 11-27%. Breastfeeding initiation before discharge from hospital was significantly associated with the reduced risk of diabetes for both mother and child. Association between BF initiation and incidence of DM was detected in First Nations and non-First Nations mothers with or without a history of GDM.	Chiefs, the Department of Aboriginal and Northern Affairs Canada and the Indian Registry System.	Nontreaty First Nations/Metis were not included in study because they have lost their official status in Canada and would not be identified in the Status Verification System registry.	
McIsaac, K. E., Moineddin, R., & Matheson, F. I. (2015). Breastfeeding as a	The purpose was to study how breastfeeding is preventative for SIDS, gastrointestin	Levin's formula was used to calculate the population attributable fraction	Sample was taken from 2007-2010.	Levin's formula was used to calculate the population attributable fraction (PAF). Data sources for prevalence of breastfeeding included two	5.1%-10.6% of otitis media could be prevented with any breastfeeding. 24.3%-41.4% of gastrointestinal infections could be	Used data for all Indigenous people in Canada. Data analyses showed promising results to further support breastfeeding as	The study is strictly quantitative based which omits qualitative data that may be important to consider when researching ways to	Level IV: Case control study

means to prevent infant morbidity and mortality in aboriginal canadians: A population prevented fraction analysis. *Canadian Journal of Public Health = Revue Canadienne De Sante Publique, 106*(4), e217-22.	al infection, respiratory tract infection and otitis media.	(PAF). Data sources for prevalence of breastfeeding included two surveys: the Canadian Community Health Survey and the First Nations Regional Health Survey. Relative risk estimates were from published meta-analyses.		surveys: the Canadian Community Health Survey and the First Nations Regional Health Survey. Relative risk estimates were from published meta-analyses.	prevented with any breastfeeding. 13.8%-26.1% of hospitalizations from respiratory tract infections could be prevented with any breastfeeding. 12.9%-24.6% of SIDS could be prevented with any breastfeeding. Interventions that promote, protect and support breastfeeding may prevent a significant proportion of infection and mortality in Canadian Aboriginal (First Nation, Inuit and Metis) infants. Interventions include support of Baby Friendly hospitals and access to community-based programs.	preventative for SIDS, gastrointestinal infection, respiratory tract infection and otitis media. Findings also support improving social conditions as a step towards eliminating disparities.	eliminate disparities in breastfeeding.	
McQueen, K., Sieswerda, L. E., Montelpare, W., & Dennis, C.	The purpose of this study was to evaluate breastfeeding outcomes among	Prospective cohort study in which participants completed	130 breastfeeding Aboriginal women from two sites in Northwester	Data analyses were conducted using Stata 12 for the questionnaire. Analysis of BSES-SF scores was completed using a	Aboriginal women are at greater risk for not initiating breastfeeding. Breastfeeding education should start	Sample was from both urban and rural sites.	Loss of follow up.	Level IV: Prospective cohort study

(2015). Prevalence and factors affecting breastfeeding among aboriginal women in northwestern ontario. *JOGNN: Journal of Obstetric, Gynecologic & Neonatal Nursing, 44* (1), 51-68.	Aboriginal women and to explore what affects breastfeeding in the early postpartum period.	a baseline survey in the hospital and then answered follow up questions by phone and 4 and 8 weeks postpartum. The Maternal Characteristics Questionnaire and the Breastfeeding Self-Efficacy Scale short form (BSES-SF) were used.	n Ontario, Canada completed the baseline questionnaire. 105 women completed the follow up call questions at 4 weeks. 102 women completed follow up call questions over the phone at 8 weeks.	model developed based on logistic regression.	during the prenatal period when women are coming in for regular appointments. Breastfeeding education should include benefits, hospital practices to promote breastfeeding, support resources (family, peer and community). Variables that may affect breastfeeding: household income, intended breastfeeding duration, plan to exclusively breastfeed, perception of meeting breastfeeding goals, and higher breastfeeding self-efficacy.			
Primo, C. C., & Gomes Brandão, M. A. (2017). Interactive theory of breastfeeding: Creation	The purpose was to describe a breastfeeding theory based on King's Conceptual System.	A theoretical study that used King's Conceptual System to develop the Interactive Theory of Breastfeedi	52 articles from their literature review were used in the concept analysis.	Concept analysis, synthesis of scientific literature and derivation of theory were used to analyze articles and to develop a middle-range theory.	Main concepts: Mother-child dynamic Interaction; Woman's biological conditions; Child's biological conditions; Woman's perception; Child's perception; Woman's body image; Space for breastfeeding; Mother's role;	Interactive Theory of Breastfeeding is in alignment with models of social determinants of health.	Needs to be tested empirically.	Level III: Theoretical study

and application of a middle-range theory. *Revista Brasileira De Enfermagem, 70*(6), 1191-1198.		ng. Three methodological procedures were followed: concept analysis, synthesis of scientific literature and derivation of theory			Organizational systems for the protection, promotion and support of breastfeeding; Family and social authority; Woman's decision making; Stress; Time of breastfeeding Theory Core Concept: Breastfeeding as a transactional concept. Interactive Theory of Breastfeeding is in alignment with models of social determinants of health.			
Rhodes, K. L., Hellerstedt, W. L., Davey, C. S., Pirie, P. L., & Daly, K. A. (2008). American indian breastfeeding attitudes and practices in minnesota. *Maternal and Child*	Examine attitudes, health behaviors and social support related to breastfeeding initiation and duration in a Minnesota based American Indian population.	Community-based longitudinal study data from the Little Ears Study conducted from 1998-2001 in four American Indian clinics in MN.	Convenience sample of 408 pregnant women with 380 completing reliable interviews. 380 women for the prenatal interview, 342 at the 2-weeks postpartum interview and 256 at	Research nurses interviewed women individually at healthcare facilities during last trimester of pregnancy, then at 2 weeks postpartum and 6 weeks postpartum. Participants completed the interview, a short self-administered survey and received a small cash incentive at each visit. The prenatal survey had 19	The six variables associated with breastfeeding initiation: Encouragement to breastfeed by husband/boyfriend, encouragement to breastfeed by mother, agreement with the 6 stated health benefits of breastfeeding, agreement with the affective benefits of breastfeeding, maternal education beyond high school and the study infant	Provided in person interviews with a nurse researcher Included questions about the use of traditional medicines. Documented relationship of use of traditional medicine and increased duration of breastfeeding rates at 6 months. Documented a correlation between women who followed traditional practices also followed traditional feeding	Geographic area of MN/Upper Midwest 4% of the participants were not American Indian, but pregnant with an American Indian baby. Limited socioeconomic diversity, mostly low income, almost all WIC clients.	Level VI: qualitative study

Health Journal, 12 Suppl 1, 46-54.			the 6 month survey.	questions about attitudes towards breastfeeding, 3 about social support and several questions about risk factors, traditional medicine and demographics. The postpartum surveys included questions about the infant, feeding practices and support.	being the only child in the household. Five variables associated with breastfeeding at 2 weeks postpartum: Encouragement to breastfeed by husband/boyfriend, encouragement to breastfeed by mother, agreement with the 6 stated health benefits of breastfeeding, agreement with the affective benefits of breastfeeding and no maternal smoking in last 7 days. Encouragement from the mother was the only significant variable after multivariable analysis. At 6 months postpartum there was a six-fold increase in breastfeeding with the reported use of traditional medicine. Additionally, breastfeeding at 6 months was associated with no maternal smoking for past 7 days.	practices/breastfeeding.		

Schwartz, R., Ellings, A., Baisden, A., Goldhammer, C. J., Lamson, E., & Johnson, D. (2015). Washington 'Steps' up. Journal of Human Lactation, 31(4), 651-659.	Purpose was to develop and pilot a 10-step clinic breastfeeding support strategy. Primary care clinics were provided resources, training and technical assistance to help facilitate best-practice policy and environmental changes to improve clinic breastfeeding support.	Eight health centers serving primarily Latino and Native American communities implemented The Ten Steps to a Breastfeeding-Friendly Community Health Center. A clinic self-assessment, training and technical assistance were provided by a state project team.	Applications were accepted from clinics serving primarily communities of color, following the guidelines from the CDC grant. Applicants were selected using the criteria and decision matrix provided by the CDC grant. Using a competitive Request for Application (ROA) process, 8 health centers serving primarily Latino and Native American clients were selected.	A self-assessment questionnaire was used to get baseline data on clinics for policy updates/changes/implementation and to develop a scoring system for a statewide recognition program. Training included 3 in-person sessions; the first, focusing on the 10-step framework. The second focused on self-assessment baseline scores and billing for lactation support. The third focused on staff attending a full-day clinical skills course on "Managing Early Breastfeeding Challenges". Technical assistance included 2 site visits and the state project team was available throughout the project for technical assistance. State team provided an implementation	All clinics increased the number of Steps to a Breastfeeding-Friendly Community Clinic over the 6 month implementation period. Cultural aspects for Native American clients: breastfeeding education sessions that were culturally tailored by Chair of Native American Breastfeeding Coalition focusing on historical trauma. Breastfeeding Talking Circle to provide traditional form of listening/communicating. Pilot demonstrated that clinics can successfully implement a QI project to apply the Ten Steps to a Breastfeeding-Friendly Community Health Center. An effective way to provide continuity of care for breastfeeding mothers and infants following hospital discharge.	Focused on health centers that provided care to communities of color. Highlighted culturally significant ways to approach education and implementation.	Short project timeframe of 6 months. Self-assessments were changed after first assessment was completed due to feedback from clinics making the pretests and posttests different.	

				toolkit as well as other resources.				

Appendix B

Using the Interactive Theory of Breastfeeding to promote breastfeeding within the Indigenous population

Shawn Meyer, RN, BSN, CLC, Master's Candidate

Problem

- Breastfeeding is the recommended best choice for infant feeding.
  - Recommendations:
    - Exclusive breastfeeding for 6 months
    - Breastfeeding for at least 2 years, along with nutritionally safe and adequate foods
- Low breastfeeding rates persist in the Indigenous community
  - Barriers:
    - Lack of support
    - Lack of access to breastfeeding education and lactation services
    - Historical trauma

Methodology

- Search terms used: "Native American" AND "Indigenous" AND "American Indian" AND "breastfeeding" AND "support"
- Inclusion criteria: English language, peer reviewed articles with date range from 2013 to 2018. Date range expanded to include pertinent literature referencing historical data related to breastfeeding and historical trauma.
- Exclusion criteria: more than 5 years old unless referencing cultural data, published in a language other than English, Indigenous cultures not from United States and Canada
- Melnyk pyramid used to analyze the level of evidence.

Theoretical Framework

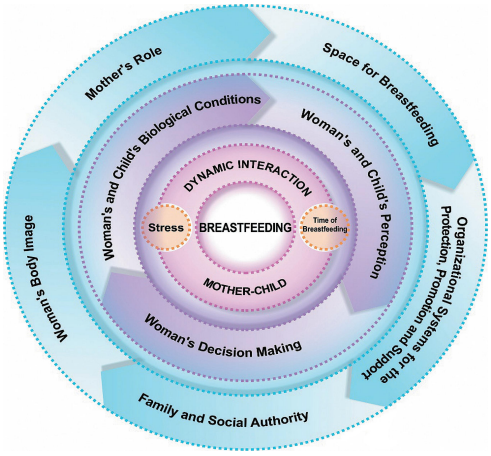
- The Interactive Theory of Breastfeeding
  - based on King's Conceptual System (Primo & Brandão, 2017).
  - Social determinants of health models (Primo & Brandão, 2017).
- Purpose: to closely examine factors that affect the breastfeeding dyad (Primo & Brandão, 2017).
- Designed for healthcare professionals (Primo & Brandão, 2017).
- Indigenous population:
  - Applicable in addressing the barriers that are negatively affecting breastfeeding rates

Findings

- Mother-Child Dyad:
  - Needs effective support: provide culturally sensitive educational materials, include community and family in patient education and provide realistic advice (Abbass-Dick, et al., 2018; Eni, Phillips-Beck, & Mehta, 2014).
- Perception/decision making:
  - Breastfeeding as a cultural tradition helps to increase breastfeeding rates (Dodgson & Struthers, 2003).
- Systems/space:
  - Implementing breastfeeding friendly policies is related to increase in breastfeeding rates (Louis-Jacques, Deubel, Taylor & Stuebe, 2017).

Purpose

- Defined the scope of the problem of low breastfeeding rates among Indigenous mothers
- Created an evidence-based educational toolkit for healthcare providers working with Indigenous communities
- Used conceptual framework of the Interactive Theory of Breastfeeding to guide collection of evidence related to potential barriers to breastfeeding within the Indigenous community



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Clinical Practice Implications

- Family and Social Authority:
  - Welcome all support people to participate in patient education related to breastfeeding (Abbass-Dick, et al., 2018; Eni, Phillips-Beck, & Mehta, 2014).
  - Provide community education with emphasis on cultural considerations (Abbass-Dick, et al., 2018; Banks, 2003).
- Organizational Systems:
  - Implement breastfeeding friendly policies at healthcare sites (Louis-Jacques, Deubel, Taylor & Stuebe , 2017) .
- Space for Breastfeeding:
  - Create lactation spaces (Louis-Jacques, Deubel, Taylor & Stuebe, 2017) .

Linda Shanta, PhD, RN, ANEF Faculty Advisor

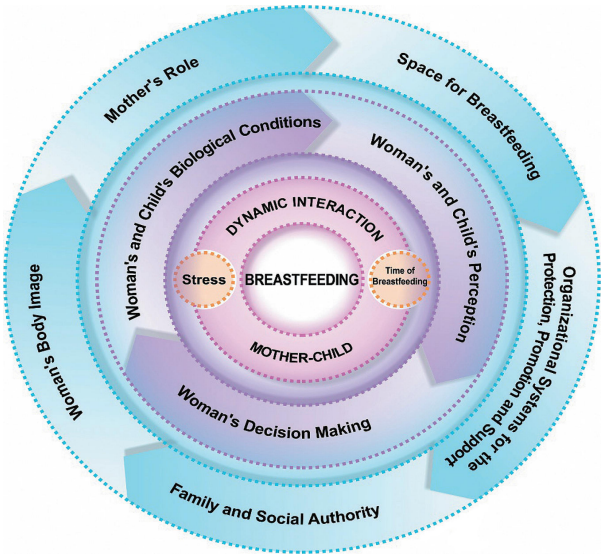
References upon request shawn.meyer.1@ndus.edu

Appendix C

Shawn Meyer, RN, BSN, CLC

Purpose of this Toolkit:

- Created for healthcare providers to promote breastfeeding in Indigenous communities.
    - Low rates of breastfeeding within the Indigenous population need to be addressed in order to improve the overall health of the Indigenous community.
- The conceptual framework of the Interactive Theory of Breastfeeding
    - Based on King's Conceptual System (Primo & Brandão, 2017).
    - It's a social determinants of health model (Primo & Brandão, 2017).
    - Purpose is to closely examine factors that affect the breastfeeding dyad (Primo & Brandão, 2017).
    - Designed for healthcare professionals (Primo & Brandão, 2017).
    - Applicable in addressing the barriers that are negatively affecting breastfeeding rates in the Indigenous population



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Section 1: Facts about Breastfeeding

Objectives: By the end of this section the learner will

1. **Be able to state what the recommendations are for breastfeeding at 6 months and beyond.**
2. **Be able to state the benefits of breastfeeding for infant and mother.**

Breastfeeding recommendations:

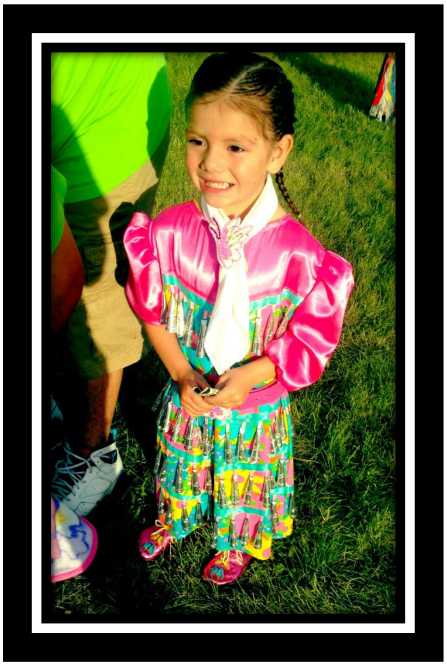
- American Academy of Pediatrics (AAP) states that breastfeeding is the recommended best choice for infant feeding (2018).
- World Health Organizations recommendations include:
    - Exclusive breastfeeding for 6 months and maintaining breastfeeding in a child's diet for at least 2 years, along with nutritionally safe and adequate foods (n.d).

Benefits of Breastfeeding:

Breastfeeding has both short term and long-term benefits for infants and breastfeeding mothers (AAP, 2018).

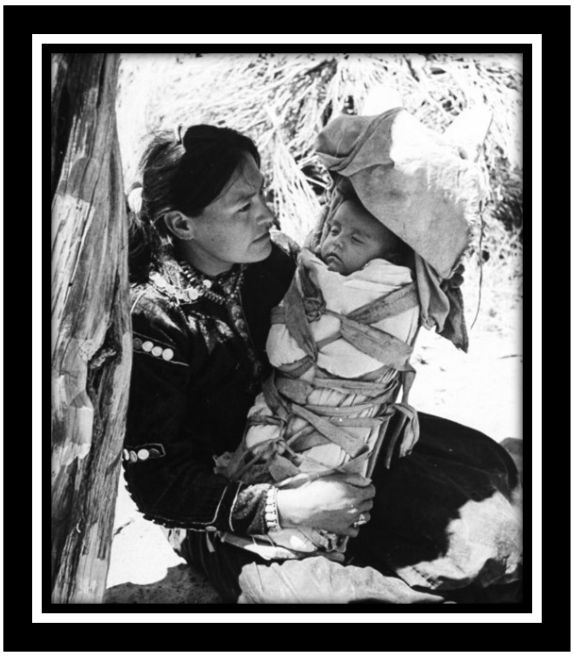
Benefits for infants:

- Reduced allergies
- Reduced childhood obesity
- Reduced respiratory infections
- Reduced ear infections
- Reduced risk of necrotizing enterocolitis
- Protective factor against sudden infant death syndrome and infant mortality



Benefits for the mother:

- Decreased incidence of postpartum depression
- Reduced risk of hypertension
- Reduced risk of diabetes
- Reduced risk of cardiovascular disease
- Reduced risk of breast cancer
- Reduced risk of ovarian cancer



Economic benefits:

- Reduced waste
- Increased savings related to formula costs
- Reduced health care costs

Section 2: Breastfeeding rates in the Indigenous population

Objectives: By the end of this section the learner will

1. **Be able to explain why there is a disparity in breastfeeding rates for the Indigenous population.**
2. **Be able to state what the current breastfeeding rates are for the Indigenous population.**

Breastfeeding rates in the Indigenous population:

Despite the known benefits to mother and infant, breastfeeding rates within the Indigenous population continue to be statistically lower than other racial groups (Louis-Jacques, Deubel, Taylor & Stuebe, 2017).

Breastfeeding rates in the Indigenous population are significantly lower:

- Only 68.3% of babies ever breastfed compared to the U.S. rate of 81.1% and the Healthy People 2020 goal of 81.9% (Louis-Jacques et al., 2017).
- At 12 months only 21.6% of babies are getting any breastmilk, while the Healthy People 2020 goal is 34.1% (Louis-Jacques et al., 2017).

Reasons why an Indigenous mother may choose not to breastfeed:

- Lack of knowledge of breastfeeding benefits
- Social norms within the community or social circle of the mother
- Poor family and social support
- Embarrassment
- Lactation problems
- Lack of support at workplace or school
- Lack of support at child care center
- Historical trauma

What is historical trauma?

The "intergenerational collective experience of complex trauma that was inflicted on a group of people who share a specific group identity or affiliation such as a nationality, religious affiliation or ethnicity" (Ehlers et al., 2013, p. 180.) The effects of historical trauma,

which include increased substance abuse and increased rates of depression, are being passed down through the generations (Ehlers et al., 2013).

Breastfeeding clearly benefits infants and mothers, so it is vital to promote breastfeeding within the Indigenous community to enhance early childhood health and family bonding.

Section 3: Creating a Breastfeeding Support Program

Objectives: By the end of this section the learner will

1. **Be able to name several effective ways to provide breastfeeding support.**
2. **Be able to explain why including community education is important.**

Effective breastfeeding support includes multi-level support that is community-wide:

- Education about the benefits of breastfeeding
- Education about when to start solid foods
- Providing culturally sensitive educational materials
- Including the mother's support people in the educational process
- Providing realistic advice
- Lactation support at the time of delivery
- Lactation support within hospital systems providing birth services
- Implementation of the Ten-Steps for Baby-Friendly Hospitals
- Implementation of breastfeeding friendly policies
- Including tribal elders with promoting breastfeeding within the community
- Including community educational campaigns

Creating Breastfeeding Support:

1. Assessment: Start by assessing how breastfeeding friendly your hospital, clinic or community health agency is.
2. Gather or create educational materials that are culturally appropriate.
3. Gather local resources for breastfeeding moms/families:
    a. Where are the lactation rooms for employees
    b. WIC referrals
    c. Do you need to create a breastfeeding support circle or is there one already?
    d. Do you have lactation counselors or WIC BF counselors in the community?
    e. Where can you refer moms that have special circumstances while breastfeeding?
4. Implement a breastfeeding friendly policy. After the assessment process, find a local champion, connect with tribal elders or the director of your health clinic to implement a breastfeeding friendly policy.
5. Create lactation friendly spaces.
6. Communicate the policy and the benefits of breastfeeding widely.
    a. Write articles for your local tribal paper
    b. Post on social media
    c. Interview families and create posters highlighting local successes.
    d. Celebrate your successes! Have a breastfeeding event inviting families to share a meal, take pictures and celebrate breastfeeding.
7. Evaluate and sustain.
    a. Collaborate with local breastfeeding coalitions.
    b. Join national breastfeeding organizations.
    c. Find support within your community to continue programs.

The following are ideas to overcome barriers related to social determinants of health related to the Indigenous community using the Interactive Theory of Breastfeeding model as a guide. Each community will need to be assessed for its strengths and areas needed improvement. The following ideas are suggestions based on evidence-based interventions that have had success in other Indigenous communities.

Overcoming barriers to breastfeeding:

Organizational Systems for the Protection, Promotion, and Support of Breastfeeding
Family, community and society are factors that may influence the goal of protection, promotion and support of breastfeeding (Primo & Brandão, 2017).

Potential barriers:

- Lack of support from community or family due to gaps in knowledge related to breastfeeding
- Lack of breastfeeding friendly policies at schools, daycares and workplaces.

Strategies:

- Find a breastfeeding champion within the community that can help to promote breastfeeding from within the community.
- Implement breastfeeding friendly policies at all tribal buildings and work places. Breastfeeding policies help to increase initiation and duration rates by providing support to mothers as they return to school and work.
- Create public service announcements with community members. Use imagery and symbols that are meaningful to the community. Find community members that have successfully breastfed to create posters or short videos to promote breastfeeding within the community.

Family and Social Authority
Family and social authority includes the values and backgrounds of those involved in the breastfeeding process (Primo & Brandão, 2017).

Potential Barriers:

- Family lacks a history of breastfeeding due to historical trauma.
- Cultural traditions, such as, breastfeeding have been interrupted due to social determinants of health.

Strategies:

- Include the mother's support people during clinic visits or educational classes.
- Reach out to tribal elders to learn more about breastfeeding traditions and infant feeding practices.
- Include tribal elders with community breastfeeding educational campaigns. Reach out to the community's tribal aging unit to offer breastfeeding education at elder meal sites.

Mother's Role

The mother's role is how the woman is expected to behave as a mother, including her breastfeeding relationship with her child (Primo & Brandão, 2017).

Potential Barriers:

- Mother feels pressure from the many roles she is juggling in life, such as, work, school and family obligations.
- Mother feels the stress about meeting the needs of her child.

Strategies:

- Learn more about what the cultural expectations are for mothers.
- Discuss expectations of the mother's role with patient during clinic visits to assess any barriers or concerns.
- Refer mother to cultural resources within the community for support.

Woman's Body Image

A woman's body image is described as how she views her body while breastfeeding and the reaction of others to her breastfeeding body (Primo & Brandão, 2017). A woman's sense of body image was greatly impacted by the sexual objectification of women's bodies, negative messages about one's body while living at residential schools and a history of physical and sexual trauma (Eni et al., 2014). Women shared stories of feeling shame while breastfeeding as family members would encourage them to cover up or that it was rude to expose the breast while breastfeeding their infant (Eni et al., 2014). Historical trauma at boarding schools and cultural loss has had a direct impact on breastfeeding initiation rates and duration. Participants discussed the perception that one's body is not capable of feeding/nurturing a child and that a healing of the spirit needed to occur in order to overcome the impact of the trauma (Eni et al., 2014). Teen moms stated that they were viewed as not capable of caring for infant, let alone breastfeed their child (Eni et al., 2014).

Potential Barriers:

- Mental health issues and triggers with body related to breastfeeding.
- Feelings of low self-worth and the mother's feeling that her body is not capable of nourishing her child.

Strategies:

- Refer mother to counseling services when appropriate to encourage healing.
- Refer mother to cultural support services
- Provide cultural sharing sessions by partnering with tribal members to create Talking Circles to support mothers and families

Women's Decision Making

A women's decision making process is described in the Interactive Theory of Breastfeeding as the process in which a woman chooses to breastfeed (Primo & Brandão, 2017).

Potential Barriers:

Strategies:

- Provide breastfeeding education starting with the first prenatal appointment.
- Provide breastfeeding education within the community to normalize breastfeeding.
- Provide breastfeeding support by implementing breastfeeding friendly policies to help overcome any barriers when returning to work or school.
- Provide breastfeeding education at childcare sites to promote breastfeeding friendly childcare centers and increasing the knowledge of childcare providers related to handling, storing and feeding breastmilk.

Woman and Child's Perception of Breastfeeding and Space for Breastfeeding

A woman's perception of breastfeeding is structured by many factors including her knowledge, background, social and economic conditions and culture (Primo & Brandão, 2017). Perceptions of breastfeeding included knowledge of how it benefits her child health (Primo & Brandão, 2017).

Potential Barriers:

- Lack of knowledge of breastfeeding benefits to mother and infant.
- Lack of knowledge of how breastfeeding preserves tribal feeding traditions.

Strategies:

- Promote breastfeeding as a way to address health concerns present within the community such as diabetes, obesity and cancer.
- Promote breastfeeding as preventative for SIDS.
- Promote the benefits of breastfeeding for infants and mothers which will increase the health of the tribe for future generations.

Woman and Child's Biological Conditions

To help overcome any biological conditions that may be present in the woman or the child, communities can increase lactation services to address special conditions.

Potential barriers:

- Physical conditions of mother and/or infant that interrupt the breastfeeding process.

Strategies:

- Increase lactation support services:
    - WIC breastfeeding peer counselors to provide support to community members

    - Encourage Community Health Nurses and Community Health Representatives to obtain Certified Lactation Counselor training
    - Birthing hospitals to obtain Baby-Friendly status
- Provide patient education related to breastfeeding and realistically what to expect for the woman and the child related to body changes and anticipatory guidance with infant feeding patterns.

Inner circle of the Interactive Theory of Breastfeeding:

The mother-child dyad is greatly influenced by time and stress which are barriers to breastfeeding. Barriers related to time and stress can be reduced by following the strategies offered within the toolkit and thus promoting, protecting and supporting breastfeeding.

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