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Tiny Tusks Internship: An Analysis of Exclusive Breastfeeding in Low Income Women

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Abstract

Due to the fact that formula feeding is often seen as the “easier” option for some women, this literature analysis was conducted to gain an understanding about factors which influence the perception of breastfeeding in low-income populations. This literature review analyzed the factors which influence reduced rates of breastfeeding in lower income populations and the importance of breastfeeding education to this population. A search through CINAHL and PubMed for journal articles dating from 2016 to 2021 was conducted. The search generated 46 studies, 40 from CINAHL and 6 from PubMed. Study eligibility was determined by looking for articles involving low income populations, low rates of breastfeeding, and reasons for these low rates. Of the 10 studies retrieved from the search of the two databases, 4 studies were selected for discussion. These studies include one cross-sectional analysis within a cohort study, one randomized 2-arm parallel group study, one longitudinal cohort study, and one formative research study. In total, these 4 studies included 2,581 participants from which data was collected and took place in four different countries. All of these studies focused on mothers in low-income areas where breastfeeding rates were being observed. Levels of poverty differed based on country and available resources in those areas. When providing education about the breastfeeding benefits for both mother and child to these low-income populations, there are other factors that need to be taken into consideration. Family support, confidence in breastfeeding, and breastfeeding mother’s ability to maintain breastfeeding while working should be assessed. Encouraging this group to exclusively breastfeed can only be effective if they are provided with the option to breastfeed at work, have the time to do so, and have a comfortable, encouraging environment in the workplace.

Introduction

Upon starting my Junior year and beginning my Honors Thesis Tutorial class, my intention for my Honors Thesis was to find an internship. My goal was to find a nursing internship in a hospital in Kansas City for the summer of 2020. However, with few options to choose from in the area and limited time to find another option, I decided to apply for a business internship with the Office of Entrepreneurship and Innovation. I quickly learned that this position was not what I was looking for, and again had to go another way. Finally, I remembered discussing the Tiny Tusks internship opportunity in my Tutorial class. This had interested me previously, but I had thought that all the positions had been taken. After emailing Dr. Vowell Johnson and Dr. Scott to see if they had any available positions, I was able to begin acquiring internship hours in February of 2020. I say all of this because, already, change and adaptability were two qualities I was familiar with in finding an internship. These two qualities, I soon would come to find out, would be needed for the rest of my internship due to the pandemic. The purpose of my internship was twofold. First, I helped to promote breastfeeding access and education in tandem with the Arkansas Athletic Department at athletic events. Secondly, I created an education project over infant safety to provide to the community. This internship experience will allow me to share the benefits of breastfeeding in terms of nutrition and health for both the mother and infant. It also helped me answer what the most common reasons for not breastfeeding are. This experience helped me to better understand patient education and provided insight into the women's health profession that I had previously considered. This experience helped prepare me for my future career as a nurse in many ways. As a nurse, patient education is key. It is something I will provide to each and every patient that I come in contact with. This internship helped prepare me to be able to provide education confidently, and to be prepared to

answer patient questions. Another way that this internship prepared me for my future education, is this Honors Thesis paper and project. I expect to create a similar thesis as I advance my knowledge through graduate studies. This experience is important to me and my education because, aside from furthering my education, it has taught me time management, discipline, and multi-tasking in a way no other project has before.

Reflection

As a Tiny Tusks intern, I had a variety of duties and experiences throughout the year. Due to COVID-19, the original duties and responsibilities of a Tiny Tusk intern had to be slightly altered. At football games, rather than solely work at the Tiny Tusk's breastfeeding room, we assisted the Athletic Department with various duties throughout the stadium. One being temperature screenings for employees that began six hours prior to game time. In this role, I took temperatures, handed out passes, collected forms, and kept track of the employees who had yet to get checked in. Another duty that I performed was assisting the paramedics at the first aid stations throughout the stadium. When someone came to the station, I was the first person they saw. I would check their temperature, complete an assessment, and if the need was minor, I would provide them the care they required. If more serious, I would send them into the station where the paramedics took care of them. The final role that I performed at football games was as an ambassador. In this role, I made sure fans wore their masks and social distanced as I walked through the main level of the stadium. I also worked the Tiny Tusks breastfeeding station at basketball games. Here, I provided mothers with information about breastfeeding, showed them to the breastfeeding room, and provided stickers and coloring pages for the children. Another unique role that this year provided me as an intern was working COVID-19 vaccine clinics. The largest clinic I worked at was an all-day outdoor drive through clinic that provided 3000 vaccines

to eligible Arkansas citizens. In this role, I provided patient education about the vaccine and the potential side effects and administered the IM injection. Additionally, my final role as a Tiny Tusk intern was to create an educational project. Using the platform PowToon, I created an educational video covering how to provide infant safety in the home. This will be used for community education to support Tiny Tusks for years to come.

Challenges

This year brought many challenges to both my internship and my life overall. With the new capacity rules for the stadiums and mask mandates, I was unsure where this would leave me in terms of internship hours. Due to the cancellation of in person classes in March 2020, I had only been able to acquire a handful of hours prior to returning home for the rest of the semester. I was prepared to have to drop Honors all together with my lack of internship hours and no backup plan. Thankfully, adjustments were made to the duties of a Tiny Tusk intern, and I was able to begin gaining hours through athletic events, vaccine clinics, my education project, and online opportunities. I think my reaction to these challenges that we all faced- uncertainty of where to go from here- is something that everyone experienced this year. Considering my plan for my honors thesis had already changed many times, I was worried that I did not have time to find something else again. I was hoping to receive some guidance once the Fall semester started about how to transition into this role in a pandemic. Once I received this guidance, I was able to adapt and adjust just as I had done previously. Change, in general, wasn't new to me, and my main concern was being able to get all of my required internship hours and meet my learning goals. I think I handled this change as well as anyone could in this environment. I believe that being flexible is a skill that many people could benefit from. This is something that I utilized throughout the entire school in classes, clinical, and in my internship.

Lessons Learned

This year as a whole has taught me a lot of lessons. The main lesson that I learned during my internship was time management. This was a skill that I thought I had mastered, but this year my schedule has challenged me more than ever before. With classes, work, sorority events, club meetings, and taking breaks for myself to hang out with my friends, it was difficult to plan time to do an outside internship, project, and thesis that did not require a weekly class and meeting time. Another lesson was communication. This year, interacting with others outside of your “bubble” has changed tremendously. With social distancing and masks, it was harder to connect with and form relationships with those that I worked with and met throughout the internship. Communication overall looks a lot different this year. I think that this internship helped me to meet all of my goals and learning objectives. I was able to use systems thinking to look at the population of breastfeeding women as a broad system and observe patterns within this group. I had to use ethical reasoning while working vaccine clinics when people would show up without an appointment or who did not meet the requirements to get the vaccine. Overall, communicating during my internship was required to support the many activities. With the breastfeeding women and others that visited the Tiny Tusk table or station, we would describe our services and the benefits of breastfeeding. With the vaccine clinics, we would educate the patient about next doses, expectations, and side effects. The biggest learning objective that I met was problem-solving. This year was full of change, and any event or plan could change *at the drop of a hat*. Being flexible and thinking on my toes allowed me to meet any challenge I had during my internship.

I think my coursework in Research, Pediatrics, and OB were the most beneficial in preparing me for my honors internship. Pediatrics and OB gave me more knowledge to provide

patient education and a comprehensive background of knowledge that is reliable. My Research class helped prepare me for writing and doing the research required for a thesis. All of my nursing classes have prepared me to provide patient education and evaluate the teaching done.

This internship will help me in many ways. It will help me academically once I further my education. I plan to go back to school after working for a few years to become a Nurse Practitioner. Writing this thesis and creating my education project was a helpful experience as I continue through more schooling and have to create similar projects and papers. This internship will help me professionally because I will be able to take all that I have learned about breastfeeding and apply it when I encounter pregnant and breastfeeding patients. Furthermore, this is great practice in providing patient education, which I will have to do with each and every patient I have. Finally, this will help me personally reach a goal that I have always had which is to graduate with Honors.

Review of Literature

Introduction

Exclusive breastfeeding has become an increasingly prominent topic among health professionals as the rise in alternative products like formula supplementation have become more and more popular. Currently, only 1 in 4 infants are exclusively breastfed for the first 6 months of life (Centers for Disease Control and Prevention, 2021). This is the recommended period for breastfeeding that many infants do not reach. While breastfeeding is a lifestyle choice, it also has many health benefits for both mother and baby. According to the Centers for Disease Control and Prevention (2021), infants who are breastfed have reduced risk of asthma, obesity, type 1 diabetes, severe lower respiratory disease, acute otitis media, sudden infant death syndrome, gastrointestinal infections, and necrotizing enterocolitis in preterm infants. In addition,

breastfeeding can also decrease the mother's risk of hypertension, type 2 diabetes, ovarian cancer, and breast cancer. With all of these health benefits, along with the fact that exclusive breastfeeding is cheaper than formula feeding, it can be difficult for some people to see why women choose not to exclusively breastfeed. However, there are a number of reasons that low-income women do not choose to exclusively breastfeed (Hasan et al., 2020). Exclusively breastfeeding can interrupt these individual's work schedule and further increase their financial burdens. In addition, their workplace may not provide breastfeeding accommodations. Many women may also lack the support and knowledge to confidently breastfeed. Finally, low-income women may not receive the proper education regarding the benefits of exclusively breastfeeding (Wouk et al., 2017).

Many of the breastfeeding women I encountered during my internship had already received education about the importance of breastfeeding and I was unable to assess their income level. These women were actively breastfeeding and making use of the resources we were providing. Due to the fact that formula feeding is often seen as the "easier" option for some women, I wanted to gain an understanding about factors which influence their perception of breastfeeding. This literature review was conducted to analyze the factors which influence reduced rates of breastfeeding in lower income populations and the importance of breastfeeding education to this population.

Methods

Information Sources

The databases CINAHL and PubMed were systematically searched. A manual search of references from all articles that met eligibility criteria, including peer reviewed articles and primary studies, was conducted.

Search Strategy

A search through CINAHL and PubMed for journal articles dating from 2016 to 2021 was conducted. The search terms used for CINAHL were “breastfeeding or breast-feeding or infant feeding or lactation or lactating,” and “benefits or advantages or positive effects,” and “low-income or poverty or low socioeconomic status” were used to search for eligible articles. The search terms for PubMed had to be altered to narrow the search criteria due to a high volume of articles generated using the previously stated CINAHL search terms. The terms searched were breastfeeding; breastfeeding attitudes; breastfeeding initiation; breastfeeding knowledge; breastfeeding support; social support.

Inclusion/Exclusion Criteria

The study eligibility was determined by looking for articles involving low income populations, low rates of breastfeeding, and reasons for these low rates. Studies were excluded if they were duplicate articles, or if the article was a systematic review. A total of 10 articles, 9 from CINAHL and 1 from PubMed, were included in this review after this search was conducted.

Data Extraction

Information extracted from each study included information on study location, authors, publication year, sample size, study design, collection tools used, and the overall purpose of the study.

Results

A search through CINAHL and PubMed generated 46 studies, 40 from CINAHL and 6 from PubMed. This number was reduced to 10 studies after looking at country of origin, types of

interventions implemented, duplicate articles, and how recent the study was done. Of the 10 studies retrieved from the search of the two databases, 4 studies were selected for discussion. These studies include one cross-sectional analysis within a cohort study, one randomized 2-arm parallel group study, one longitudinal cohort study, and one formative research study. In total, these 4 studies included 2,581 participants from which data was collected and took place in four different countries. All of these studies focused on mothers in low-income areas where breastfeeding rates were being observed. Levels of poverty differed based on country and available resources in those areas. Low-income populations are unique and were chosen for this literature review due to these resource differences and in order to understand facilitating and limiting factors for breastfeeding.

The first study, conducted in India, was a cross-sectional analysis within a cohort study (Nishimura et al., 2018). This study focused on the influences of low-income women in rural India to exclusively breastfeed. They defined exclusively breastfeeding as breastfeeding without supplementation for 6 months. The population of India leads the world in preterm births, malnutrition in ages 5 and below, and neonatal mortality. The benefits of exclusive breastfeeding (EBF) could help improve the nutritional status of the population to help reverse these trends. The results of the study showed that EBF was associated with higher maternal age, maternal education, and 7-10 antenatal visits. On the other hand, mothers who did not exclusively breastfeed cited that they did not have enough milk as the most common reason. Of the 1292 women in the sample, only 48.5% exclusively breastfed for 6 months. The study concluded that breastfeeding education should be conducted at antenatal visits to increase these rates.

The next study, conducted in Puerto Rico, was a randomized 2-arm parallel group study (Yukiko et al., 2017). This study aimed to discover how to aid low income women in

maintaining breastfeeding for the recommended 6 months. Despite the efforts of WIC in Puerto Rico, the average woman breastfed for less than 10 weeks. The population in this study was 36 low income women who initiated breastfeeding. Half of the randomized participants received monthly financial incentives (ranging from \$20-\$70) that relied on the woman breastfeeding for 6 months. The other half only received the normal WIC services. The results of the study reported that a higher percentage of mothers breastfed in the incentive group than the control group. Prior research of the population showed that peer support was more effective in maintaining breastfeeding than professional education and support. While more mothers in the incentive group maintained breastfeeding into 6 months, only one participant in the entire study exclusively breastfed. Despite the differences in breastfeeding rate between the two groups, average infant weight and emergency department visits did not differ between the two.

Another study, conducted in the United States, was a longitudinal cohort study (Pitonyak et al., 2016). This study assessed life factors that were associated with maintained exclusive breastfeeding (EBF). The characteristics associated with maintained EBF were college education and marriage. The characteristics associated with lower odds of EBF were planning to return to work, living in the South, and postpartum depression. There are challenges to EBF that many women encounter during the postpartum period. These include lack of paid family leave and lower levels of income and education that is associated with inflexible working schedules. When analyzing the characteristics of the women who initiated and continued EBF, many are associated with higher income populations. The majority of these participants were Caucasian, had health insurance, received prenatal care, had some college education or graduation, and were married with previous births. This study highlights the disparities in ability to provide exclusive breastfeeding to low-income infants due to the inability to take off work, afford prenatal care,

and the lack of education about breastfeeding benefits to this population. This study in particular shows how low-income women can be more negatively affected when attempting to exclusively breastfeed. Due to lack of paid family leave and inflexible work schedules, low-income working mothers are forced to return to work quickly in order to provide for their families. This return to work interferes with exclusive breastfeeding, and other options such as formula are used in order to feed the infant, as well as return to work as soon as possible.

The final study, conducted in Bangladesh, was a formative research study (Hasan et al., 2020). The population in this study were women who worked for the ready made garment factories in the slums of Dhaka. These factories were the largest employer of low-income women, and the goal was to study the barriers and facilitators associated with breastfeeding for the women with infants 0-12 months. The study found that there were many barriers to breastfeeding for these women. These barriers included lack of support at home, heavy workloads, limited breaks, and lack of private facilities at work. All 27 participating mothers voiced knowledge of the nutritive benefits of breastmilk and that one should breastfeed for at least 6 months. Despite knowledge of breastfeeding benefits, these women introduced complementary foods as early as 2 months old and attributed to the fact that they have to work. Few facilities allowed mothers to bring the infant to work and few had adequate spaces to breastfeed or pump at work. This study demonstrated that education about the importance of breastfeeding had been given to these mothers, but their work and living situations consequently made breastfeeding more difficult and a hinderance to making enough money to support the family. The opportunity for intervention that was observed in this study was to create factory policies that were supportive of breastfeeding.

Discussion

Each study included in this literature review assessed a low-income area in different countries, the rates of breastfeeding in that area, and the reasons that these women did not sustain exclusive breastfeeding or breastfeeding for up to 6 months. A summary of the main findings of all ten articles can be found below in Table 1.

Table 1

Data Extraction of Included Articles

Title	Author	Year	Country	Design Type	Sample	Collection Tools	Summary
<i>Effect of the knowledge and attitudes of a support person on maternal feeding choice</i>	Thomas C., O’Riordan M.A., & Furman, L.	2017	United States	Cohort Study, survey	192 mother’s receiving care for their infants at Children’s Hospital in Cleveland, Ohio, along with 74 adults accompanying the mother’s	Questionnaire that obtained data about demographics, feeding characteristics, and breastfeeding knowledge and attitudes.	This study found that support of breastfeeding and breastfeeding knowledge was independent of exclusive breastfeeding, feeding decisions were not related to another adult accompanying the mother. The biggest supporting factor for exclusive breastfeeding was maternal intention. This highlights the importance and need for breastfeeding education for mothers and their support group.
<i>A multilevel approach to breastfeeding promotion: Using healthy start to deliver individual support and drive collective impact</i>	Leruth, C., Goodman, J., Bragg, B., & Gray, D.	2017	United States	Evidence informed model	651 women, most non-Hispanic, African American women under age 25.	A data collection system, REDCaps, was used to collect data on program services, participant demographics, health beliefs, and outcomes. The data was then exported to SPSS where it was recorded and analyzed.	With the known issue that low-income women and racial or ethnic minorities face many difficulties in breastfeeding duration, this study aimed at improving breastfeeding rates through individual and system level breastfeeding support. This model served women during pregnancy through the postpartum period. Implementation occurred during pregnancy to address breastfeeding knowledge and intentions and to provide education, at delivery to help initiation, and postpartum to encourage sustained breastfeeding. The study found that improved education and support increased breastfeeding rates.

<i>Determinants of exclusive breastfeeding in rural South India</i>	Nishimura, H., Krupp, K., Gowda, S., Srinivas, V., Arun, A., & Madhivanan, P	2018	India	Cross-sectional analysis within a Cohort study	1292 rural mother-infant dyads in Mysore District in the south Indian state of Karnataka	Public Health Research Institute of India staff interviewed expectant mothers before birth, 15 days after birth, and again 6 months after birth. At the 6 month interview, the 1292 women were administered a provided questionnaire to collect information on the child's birth history, general health, immunization schedule, breastfeeding status and a women's general health, Sexual health, birth preparedness and other sociodemographic characteristics.	With global increases in breastfeeding rates, there are still disparities in low income, rural populations that need to be addressed. In India in particular, only 56% of mother's exclusively breastfeed (EBF) for 6 months. This study aimed to understand the factors to do with exclusively breastfeeding in order to improve the nutritional health of infants in the India. The study found that of all the mothers who exclusively breastfed, initiation began within 72 hours of birth, and maternal age, education, and number of antenatal visits were associated with EBF.
<i>Improving access to medical lactation support and</i>	Wouk, K., Chetwynd, E., Vitaglione,	2017	United States	Cross-sectional study	11,338 PedNSS infants in the state of North Carolina	Analysis of the distribution of NC International Board Certified Lactation Consultants	In the US, the Affordable Care Act aimed to improve access to lactation services to women, but low-income women living in states that did not receive Medicaid expansion still lack

<p><i>counseling: Building the case for Medicaid reimbursement</i></p>	<p>T., & Sullivan, C</p>				<p>greater than 6 weeks of age</p>	<p>(IBCLCs) and county-level breastfeeding rates among low-income infants. Logistic regression was used to examine the association between the IBCLC density and 6 week breastfeeding duration</p>	<p>coverage for lactation support. In North Carolina, one of these states, it was concluded that breastfeeding support resources are available regionally, higher lactation consultant availability is associated with improved breastfeeding rates among low-income women, and services are cost-effective.</p>
<p><i>Incentive-based intervention to maintain breastfeeding among low-income Puerto Rican mothers</i></p>	<p>Yukiko Washio, Humphreys, M., Colchado, E., Sierra-Ortiz, M., Zugui Zhang, Collins, B. N., Kilby, L. M., Chapman, D. J., Higgins, S. T., & Kirby, K. C</p>	<p>2017</p>	<p>Puerto Rico</p>	<p>A randomized, 2-arm parallel-group design</p>	<p>36 women who were Puerto Rican or of Puerto Rican descent, read or spoke Spanish or English, lived in the area and stayed for 6 months, were enrolled in WIC, and initiated breastfeeding.</p>	<p>An entry interview was conducted that included sociodemographic characteristics, attitude towards breastfeeding, history, support, self-efficacy of breastfeeding, maternal and infant health, acculturation, and postnatal depression. A modified version of this interview was conducted at 1, 3, and 6 months postpartum.</p>	<p>This study hypothesized that monthly financial incentives among low income Puerto Rican mothers would improve breastfeeding rates at 6 months postpartum, as breastfeeding rates are low among this population. Half of the randomized participants received this incentive contingent on observed breastfeeding for 6 months, and the other half received usual WIC services only. The outcome showed higher rates of breastfeeding in the incentive group. However, only 1 mother in the study (in the incentive group) exclusively breastfed. All other participants who breastfed through 6 months used supplementation at some point in this period.</p>

						Breastfeeding was verified by research staff who confirmed indications of successful breastfeeding or pumping.	
<i>Life course factors associated with initiation and continuation of exclusive breastfeeding</i>	Pitonyak, J., Jessop, A., Pontiggia, L., & Crivelli-Kovach, A	2016	United States	Cohort Study, Longitudinal Study	1226 women practicing exclusive breastfeeding (EBF) at the time of discharge.	The study used data collected from a longitudinal study by the CDC of women that were asked up to 1 year postpartum about health, infant feeding, employment, and childcare. Data was collected via participant report.	In this EBF study, the association of EBF lasting greater than 4 months and the characteristics of the women's sociodemographics, health, work, and childcare is studied. Characteristics of women continued EBF for greater than 4 months includes, white, 25-29 years old, some college education, married, previous births and breastfeeding experience, had health insurance, and had adequate prenatal care. The results support the idea that low income women struggle disproportionately to initiate and sustain EBF.
<i>Prenatal infant feeding intentions and actual feeding practices during the first six months postpartum in rural Rwanda:</i>	Ahishakiye, J., Bouwman, L., Brouwer, I. D., Vaandrager, L., & Koelen, M	2020	Rwanda	Qualitative, Longitudinal Study	39 prenatal women attending prenatal visits in their third trimester in 2 rural health centers.	Interviews were recorded, transcribed, and analyzed. Women were interviewed during pregnancy, during the first week postpartum, at 4 months, and at 6 months	Due to the observed decrease in EBF in Rwandan rural areas from 94% during the first month to 81% in 4-5 months, this study looked at prenatal feeding intentions, underlying reasons, actual practices after birth, and factors that impede or facilitate EBF for the first 6 months of life. Of the 39 individuals 32 intended to exclusively breastfeed for 6 months, only 12 women ended up doing

<i>a qualitative, longitudinal cohort study</i>						postpartum to ascertain intentions, transition points, factors that impede and facilitate EBF. Open-ended in-depth interview guides were utilized to explore these factors.	so for the full 6 months. The impeding factors found were perceived breastmilk insufficient, family pressure, past experiences, infant health concerns, mother's workload, poverty, and food insecurity. Facilitating factors included awareness of EBF advantages, confidence, and support from health professionals and family.
<i>Psychosocial barriers and enablers of exclusive breastfeeding: lived experiences of mothers in low-income townships, North West Province, South Africa</i>	Witten, C., Claasen, N., Kruger, H. S., Coutsoudis, A., & Grobler, H	2020	South Africa	Mixed-methods study within a prospective cohort study	159 mothers living in low income areas of South Africa. 6 focus groups with 32 mothers with infants 6-24 weeks old.	Descriptive statistics were used for qualitative data. The study included sociodemographics, the Edinburgh Postnatal Depression Scale (EPDS), and the Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF) at 6-8 weeks and infant feeding data collected at 4-8 weeks, 10-14 weeks, and 20-24 weeks.	In another low-income country, South Africa, EBF rates are as low as 32%. The purpose of this study is to look at the discontinuation rate and the experiences of these mothers at different points in the post-natal period. The majority of these women were unmarried, lived at home, and did not have a job. EBF dropped from 34% at 4-8 weeks to 9.7% at 20-24 weeks. The strongest barriers to EBF were "mother's stress," "conventional medicine," "home setting," "public spaces and places," and "baby stomach ailments."
<i>The role of prenatal food insecurity on breastfeeding</i>	Dinour, L. M., Rivera Rodas, E. I., Amutah-	2020	United States	Population-based cross-sectional survey	10,159 postpartum women 2-4 months after	Data was pooled from the Pregnancy Risk Monitoring System. Binomial	Low income and food insecure mothers can save on the cost of formula by breastfeeding so money can be allocated to other necessities. In addition to this,

<i>behaviors: findings from the United States pregnancy risk assessment monitoring system</i>	Onukagha, N. N., & Doamekpor, L. A				delivery from Colorado, Maine, New Mexico, Oregon, Pennsylvania, and Vermont. The mothers surveyed were limited to those 20 and older whose infants were alive at the time of the survey.	and multinomial logistic models were utilized to assess the predictive association between food insecurity and breastfeeding initiation and early cessation.	breastfeeding has many health and nutritional benefits to the infant. However, breastfeeding can have the opposite impact due to conflicting with the mother's employment. The purpose of this study was to observe the relationship between prenatal food insecurity and breastfeeding initiation and early cessation. The study showed that a larger proportion of food secure women initiated breastfeeding.
<i>Work and breast milk feeding: a qualitative exploration of the experience of lactating mothers working in ready made garments factories in urban Bangladesh</i>	Hasan, A. M. R., Smith, G., Selim, M. A., Akter, S., Khan, N. U. Z., Sharmin, T., & Rasheed, S.	2020	Bangladesh	Formative research	27 mothers in the two slums of Dhaka among RMG workers who had 0-12-month olds.	Qualitative data was used from the selected participants of 8 in-depth interviews and 4 focus group discussions, and 2 key informant (RMG factory official) interviews.	In Bangladesh, 65% of children under 6 months are exclusively breastfed. The purpose of this study was to observe the barriers and facilitators of breastfeeding and perceptions of mothers who work in the Ready Made Garment factories of Bangladesh. These factories employ the most low-income women in the country; therefore, it was selected to be surveyed. The greatest barrier to EBF in the area is maternal employment. The result of the study showed that despite knowledge of the benefits and importance of breastfeeding for 6 months, mothers formula fed as early as 2 months to return to work.

For the four studies selected to discuss there were a variety of limitations that should be considered. All of the studies assessed socioeconomically underprivileged women but focused on a different subgroup. Each group and country had different resources available and different levels of access to the resources. For example, in the Yukiko study, all of the participants had access to Supplemental Nutrition Program for Women, Infants, and Children (WIC) (Yukiko et al., 2017). WIC is also available in the United States. WIC provided the control group in this study with onsite lactation consultation, peer counseling, peer support meetings, free breast pumps, and enhanced food packages for breastfeeding mothers (Yukiko et al., 2017). However, the participants in South India and Bangladesh did not have access to this resource, or anything similar. If these resources were available in all countries, the rates of breastfeeding could have been dramatically different and changed the results.

Another limitation was that some studies had a small sample size. While some samples were in the thousands, others had under 40 participants. The Ahishakiye et al. (2020) study done in Rwanda had only had 39 participants, the Yukiko et al. (2017) study done in Puerto Rico only had 36, and the Hasan et al. (2020) study in Bangladesh only had 27 participants. Additionally, not all of the studies measured breastfeeding data in the same way. Some studies such as the incentive-based study done in Puerto Rico measured breastfeeding by observation of effective feeding, and others measured breastfeeding rates by self-report of the mothers in the study which is not reliable in all situations (Yukiko et al., 2017). This can be seen in the study done in South India (Nishimura et al., 2018). These women were asked to self-report their breastfeeding practices at 15 days and 6 months postpartum. Recall bias and over reporting must be considered with this kind of information collection

There are gaps that exist in the literature as well. Often the question came up in these studies of how to provide help to women in these populations that know breastfeeding is beneficial but cannot due to work. Very few of the articles actually addressed this problem more than voicing that it is a concern to be researched at a later date. However, in the formative research study done in Bangladesh, it was concluded that due to the structural barriers to breastfeeding, creating supportive environments in the workplace was crucial to improving breastfeeding rates among the women working at the ready made garment factories (Hasan et al., 2020). An important conclusion was that, in order to correct this, both the government and the factories themselves need to make changes. Pitonyak et al. (2016) discussed factors associated with EBF in the United States, but the study was biased towards White, educated women, and women who work. This study also did not look at a specific low-income population, but it did look at reasons for not breastfeeding and cited low-income as a barrier. Other limitations in these studies included recall bias and social desirability bias.

The review of literature has provided a brief overview of breastfeeding in low-income populations and the barriers to EBF. When providing education about the breastfeeding benefits for both mother and child to these low-income populations, there are other factors that need to be taken into consideration. Family support, confidence in breastfeeding, and breastfeeding mother's ability to maintain breastfeeding while working should be assessed. In addition, examining what their company or facility policy is in regard to breastfeeding at work is important to supporting positive breastfeeding goals. Encouraging this group to exclusively breastfeed can only be effective if they are provided with the option to breastfeed at work, have the time to do so, and have a comfortable, encouraging environment in the workplace.

Conclusion

In summary, the available evidence demonstrates that low-income women struggle more than any other socioeconomic groups to maintain breastfeeding for up to 6 months while also working. However, the research would be more relevant if larger groups were provided with a specific interventions to increase breastfeeding rates in low-income populations such as change in company policies in regard to breastfeeding at work and paid family leave. Overall, through working as a Tiny Tusks intern, completing my education project over infant safety, and writing this review of literature, I have gained a vast amount of knowledge about the benefits and barriers to breastfeeding that I can apply in my nursing career.

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