

EXPLORING BARRIERS TO EXCLUSIVE BREASTFEEDING AMONG ADOLESCENT LATINA WOMEN

Lauren Louise Hansen MEd, BSE, SN

Karen Wambach PhD, RN, IBCLC

Faculty Mentor

University of Kansas School of Nursing

Kansas City, Kansas

Abstract

American adolescent mothers typically have low rates of exclusive breastfeeding. Currently, Hispanics make up the largest ethnic group in the U.S., have high fertility rates, bear their children at younger ages, and also have low rates of exclusive breastfeeding. These factors put adolescent Latina mothers at higher risk for not exclusively breastfeeding; however, there is a lack of research about exclusive breastfeeding in this population. This study examines the attitudes and barriers to exclusive breastfeeding in a sub-sample of adolescent Latinas who are part of an ongoing larger qualitative exploration of barriers to exclusive breastfeeding.

Pender's health promotion model frames the study in which enrollment is currently taking place in a large city in the Midwest. An exploratory descriptive approach is being performed using semi-structured, in-person interviews conducted in either English or Spanish with the use of the ARSMA-II to identify participants' acculturation levels. Tape-recorded interviews are transcribed verbatim. Spanish transcripts are translated to English for analysis. Inductive content analysis is being performed by hand. For this sub-study, the results are then interpreted in relation to Pender's Health Promotion Model in a case analysis fashion.

One 16 and one 17-year-old mother comprised this case analysis. Acculturation scores suggest that the younger teen is more acculturated than the older teen. Findings were consistent with concepts of Pender's model. The largest difference between the two cases was the amount of school support each received, with one teen getting ample support while lack of support hindered the other in providing breast milk. Findings are consistent with previous adolescent breastfeeding research regarding support.

Introduction

Breastfeeding support and promotion in the United States has become an increasingly important component of the advancement of maternal and infant health. It has been known throughout history that human breast milk is the best choice for infant nutrition. The immunologic benefits provided to infants are numerous and the health benefits for the mother are plentiful. Accordingly, the federal health initiative, Healthy People 2020 (2010) and the Department of Health and Human Services goal is to raise rates of exclusive breastfeeding to 46.2% at 3 months and 25.5% at 6 months. This ongoing initiative is supported by many organizations such as the American Academy of Pediatrics (2005) and the World Health Organization (n.d.), which both recommend exclusive breastfeeding for at least the first 6 months of life.

Despite increased knowledge of breastfeeding health benefits and public health initiatives, exclusive breastfeeding in the United States is still falling short from the recommended goals. The Breastfeeding Report Card – United States (CDC, 2010) reported that among infants born in 2007, 75% ever breastfed. It went on to say that 33% of infants were breastfed exclusively through 3 months and only 13.3% of infants were breastfed exclusively through 6 months.

Among various maternal age groups, adolescent mothers have the lowest rate of breastfeeding initiation, continuation, and exclusivity (Feldman-Winter & Shaikh, 2007; Wambach & Cole, 1999; Wambach & Koehn, 2004). For example, the National Immunization Survey (CDC, 2010) found that among infants born in 2007 to women under the age of 20, only 59.7% ever breastfed as compared to 69.7% of women age 20-29, and 79.3% of women over the age of 30. While this national database contains information regarding the rates for both exclusive breastfeeding for the general population and the rate of breastfeeding in adolescents, the rates of exclusive breastfeeding amongst adolescents is not enumerated.

Hi-lighting the disparities in breastfeeding rates among teenage mothers is important because of the high number of teen-age pregnancies and births. In 2008, approximately 434,758 infants were born to adolescents between the ages of 15 and 19 in the United States (Martin et al., 2008). The teen birth rate in the United States is currently the highest of all industrialized nations in the world (Feldman-Winter & Shaikh, 2007) making it not only a large social, but economic problem as well. Another demographic group of importance in the United States is the Hispanic population. It has been estimated that with zero net international migration, the Hispanic population will gain 6.7 percentage points, from 14.3% in 2010 to 21.0% by the year 2050. As the largest and fastest growing minority in the United States, the unique issues surrounding the health of their communities needs to be addressed. Furthermore, Hispanics have the highest level of

fertility relative to all other racial and ethnic groups (Ortman & Guarneri, 2009 & Hernandez, 2006), compounding the importance to focus on the health of mothers and infants of Hispanic origin.

With regard to breastfeeding, results of the National Immunization Survey (CDC, 2010) indicated that of Hispanic or Latino children born in 2007, 80.6% were ever breastfed. Further, they found that 46% breastfed to 6 months but only 24.7% breastfeeding to 12 months. At 3 months, only 33.4% of Hispanics were found to be exclusively breastfeeding and only 13.4% were exclusively breastfeeding at 6 months. While the numbers of Hispanics initiating any breastfeeding is well above the national averages, the rates at both 6 and 12 months are still considerably below the Healthy People objectives, and the rates of exclusive breastfeeding fall below the Healthy People targets.

As a whole, Hispanic women begin bearing children at an earlier age than other ethnic groups (Hernandez, 2006; Sussner, Lindsay, & Peterson, 2008). This has contributed to many adolescent Hispanics being faced with the important decisions surrounding infant feeding. With the rapid increase occurring in the Hispanic population and the increased level of fertility amongst the population, it is imperative that the practices surrounding the issue of exclusive breastfeeding be explored. These distinctive characteristics make exclusive breastfeeding promotion a significant priority for this population. Therefore, the purpose of this research is to examine the attitudes and barriers to exclusive breastfeeding in a sub-sample of adolescent Latinas who are part of a larger qualitative exploration of barriers to exclusive breastfeeding in Latino mothers.

Review of Literature

In order to understand this research it is important to describe first the framework that was chosen for the parent study. Along with this framework the existing knowledge base regarding the benefits of breastfeeding, the effect of acculturation on breastfeeding and factors influencing adolescent breastfeeding choices and experiences will be portrayed.

Theoretical Framework

The theoretical framework used as the guide in this study is Pender's health promotion model (Pender, Murdaugh, & Parsons, 2006). According to Schlickau and Wilson (2005) this model is a comprehensive perspective that integrates both behavioral science and nursing to explain the behaviors related to health promotion (See Appendix A for figure). Breastfeeding is considered a health-promoting behavior because it is consistent and continuous and has positive health effects for both infant and mother. Furthermore, the model is appropriate for use in breastfeeding

research and maternity practice because nurses are able to influence and support mothers in this health behavior.

Pender's health promotion model is comprised of three major constructs: individual characteristics and experiences; behavior-specific cognitions and affect; and behavioral outcomes. The model represents a framework that is designed to explain the complex decision that individuals face when engaging in health promoting behavior. The first component, individual characteristics and experiences, is comprised of both prior related behaviors and personal factors, which include biological, psychological, and socio-cultural. Those factors influence the future behavior and for the most part are not modifiable factors. The behavior-specific cognitions and affect consist of factors that are divided into two main categories: those that are perceived and those that are influences. The model looks at the perceived benefits of action, perceived barriers to action, perceived self-efficacy, and the activity-related affect. Interpersonal influences that are able to affect the health promoting behavior include family, peers, and providers. Support available, role models, and also societal norms may also influence the behavior. The different options available, aesthetics, and the characteristics of the demand are components of the type of situational influences that one may have. Those factors all have an impact on the commitment to the plan of action. Lastly, the model is made up of the behavioral outcomes. Here the model looks at the immediate competing demands (low amount of control over) and preferences (high amount of control over) that may inhibit and hinder or help to continue to promote the health promoting behavior.

Self-efficacy is a central concept of this model because it is based upon the belief that an individual takes an active role in determining and maintaining individual health behaviors. This model also takes into consideration not just the behavior specific cognitions but individual characteristics and experiences that includes: biological conditions of age and gender; psychological factors or self-esteem, self-motivation, and personal competence; and the sociocultural factors of race/ethnicity, acculturation, education, and socioeconomic status (Pender et al., 2006; Schlickau & Wilson, 2005).

The ten determinants of behavior within the health promotion model have been found to mimic the same factors that affect breastfeeding promotion and support. For this reason, the concepts and relationships found will assist in providing a meaningful approach to this particular research and the creation of interventions in the future (Schlickau & Wilson, 2005).

This model has been used successfully in many studies regarding adults and, more recently, in studies involving adolescents. An integrative review of research in the use Pender's model in adolescent studies suggested that the model is appropriate for adolescent research (Srof & Velsor-

Friedrich, 2006). For example, it was determined that the underpinnings of social cognitive theory presented in Pender's model, made it an appropriate framework to use as a predictor of health-promoting behavior. However, the linear nature of the Pender's model was seen as a possible barrier to understanding the complexities of relationships for the adolescent. The previous research with adolescents and the model have been primarily focused on chronic illness cases. Therefore, the concept of imitation (role-modeling) that plays such a large part in breastfeeding support and decision making does not exist (Srof & Velsor-Friedrich, 2006).

Health Benefits of Breastfeeding

Breastfeeding has been found to be an optimal source of nutrition for both newborns and their mothers. Benefits for the mother include more rapid return to the pre-pregnant uterus size, a decrease in postpartum bleeding, and a decrease in menstrual blood loss. Many women also find that they are able to get back to their pre-pregnancy weight much quicker. Infants have shown better cognitive development, and a decrease in the incidence/severity of common infections (respiratory tract, otitis media, diarrhea, urinary tract, necrotizing enterocolitis, and pneumonia). Increased childhood obesity and diabetes rates are related to not breastfeeding (Gill, 2009; Hernandez 2006; Schlickau & Wilson, 2005). Hispanics have the largest proportion of overweight children according to the 2002 Pediatric National Nutritional Surveillance Survey (REF), which makes breastfeeding in this population even more desirable.

Acculturation

"Acculturation is the process of adapting to a new culture and adopting the values, beliefs, attitudes, and practices of the 'new' or dominant culture" (Gill, 2009, p. 245). It occurs when groups of individuals from different cultures come in contact with each other and is a multidimensional process (Jimenez, Gray, Cucciare, Kumbhani, & Gallagher-Thompson, 2010). Gill found that the number of Hispanic mothers that initiate breastfeeding of their children is higher than those of other women; however, the rates for exclusive breastfeeding at 3 and 6 months still fall below the Healthy People goal. The decision to breastfeed was determined prior to giving birth in the majority (63%) of Hispanic women. It was also found that of those women, foreign-born, were more likely to make the decision to initiate breastfeeding or exclusively breastfeed than their counterparts that were born in the United States.

Ethnic and racial differences in United States breastfeeding rates may be related to acculturation and the role of immigrant status (Gill, 2009; Sussner, Lindsay, & Peterson, 2008). Gill described research showing that Hispanics that are more likely to initiate breastfeeding have closer ties to their cultural beliefs, traditions, and practices; immigrant mothers were more likely to

initiate breastfeeding than their American-born counterparts (Gill, 2008). For every year that a Hispanic mother resided in the United States, there was a 4% decrease in the odds of breastfeeding. There was also a negative correlation to exclusive breastfeeding when English was being spoken in the home. "Research has shown that as the degree of acculturation increases for Mexican American women, the rate of initiation of breastfeeding decreases" (Hernandez, 2006, p. 320). For most Hispanic women, breastfeeding is the cultural norm; however, they perceive bottle-feeding as the norm for American women, and thus, believe it to be superior.

Adolescents and Breastfeeding

Infants of adolescent mothers are at a significantly greater risk for infant mortality, morbidity, and developmental delays due in large part to the social and economic disadvantages faced (Mossman, Heaman, Dennis, & Morris, 2008). Prematurity, small for gestational age, and a risk for less than optimal maternal-infant attachment are more likely amongst infants born to adolescent mothers. Research has shown that breastfeeding has been found to be of great benefit to combat these problems by providing the appropriate micronutrients and helping in promoting the maternal-infant closeness (Nelson, 2009). Breastfeeding can also aid in offsetting some of the economic burden that adolescent mothers face (Wambach & Cole, 1999).

When looking at the adolescent mother's history, it was found that those who were breastfed as infants had a much more positive view of breastfeeding than those that had not been breastfed as infants (Mossman et al., 2008; Nelson, 2009). In the study by Mossman et al., it was also found that significantly more mothers who initiated breastfeeding were breastfed themselves, and the majority that planned to breastfeed the longest had decided that prior to pregnancy or during the first trimester. It was also found that the majority had a partner supportive of their decision to breastfeed.

Attitudes of the adolescents' peer group, partner, and family also were reported as having a large influence on the decision to breastfeed (Mossman et al., 2008). In one study, 70% of high school females of a middle class background identified embarrassment as a major barrier to breastfeeding (Swanson, Power, Kaur, Carter & Shepherd, 2005). Other issues that have been found to have significant impact on adolescent breastfeeding outcomes include: breastfeeding support from the teens' mother, boyfriend, and friends, fatigue, the concern of being tied down, body image perception, breast exposure, medical complications, pain, breastfeeding knowledge, school/work, perceived barriers, anxiety, and difficulties with positioning and latch on (Mossman et al, 2008; Nelson, 2009; Wambach & Cohen, 2009).

Method

Design

The parent study from which this study originates is still in progress. The study, using Pender's theoretical framework as the guide, uses an exploratory descriptive design. Data are collected using formal interviews, a qualitative acculturation measurement tool, and a demographic survey. This report focuses on the findings from the adolescent participants in the study. A case study analysis approach was used because thus far only two adolescents have participated in the study.

Sample Criteria

Adolescent Latina mothers of infants up to 6 months of age were eligible for participation. To qualify, mothers must have been between the ages of 16 and 20 years old, and currently breastfeeding or have breastfed to two weeks of age. The infant must have been a singleton full-term infant of greater than 37 weeks of gestation. Mothers could be English-speaking, bi-lingual, and/or Spanish speaking.

Setting and Procedures

Participants were recruited at an academic medical center's pediatric outpatient clinic, a clinic that serves low-income families, and a community-based project that supports a diverse group of families between October 2010 and present. Candidates were identified during well-baby visits by a pediatric nurse practitioner and a physician assistant at the hospital clinic. At the others sites, subjects were identified by patient advocates and various types of health care workers. Individual interviews were conducted in the outpatient clinic or in the participant's home. A bi-lingual research assistant conducted all interviews and recorded field notes throughout the interview and asked clarifying questions, if necessary. Participants were provided with a token gift for participation in the study (e.g. photograph holder, infant toy) and their parking fee reimbursed if interviewed at the clinic setting. The institutional review board approved the study in its entirety. There were no legal, social, physical or psychological risks anticipated for the participants. Confidentiality of the subjects was assured and informed consent laws regarding minors were followed. Informed consent procedures were done prior to data collection for all participants. The institutional review board recognizes adolescent mothers as emancipated minors so additional parental consent was not necessary.

Data Collection

Upon admission to the study, participants were asked in which language (English or Spanish) they were most comfortable. The consent was read in the language requested and any questions were answered prior to beginning the interview. Participants were informed that at any time they were able to decline answering a question and that withdrawal from the study may occur at any time without any further ramifications. Demographic data were collected (See Appendix B) in order to accurately portray those involved.

The selected language was also used for the audio-recorded interviews. Two digital tape recorders were used to ensure technological reliability. Interviews took place on a mutually (investigator and participant) agreed upon date, time and location. The setting was private, quiet and comfortable. Interviews lasted about one hour. Semi-structured interviews were based on open-ended questions (See Appendix C) developed by the investigator and were based on concepts in Pender's health promotion model (See Appendix A). Additional questions more specific to the adolescent mother were also included (See Appendix D) when appropriate. Throughout the interview probing questions were used to clarify statements or solicit more detailed information when needed. Observations regarding the participant's mannerisms, affect, body language, and voice inflections were also recorded.

The Revised Acculturation Rating Scale for Mexican Americans (ARMSA-II) (See Appendix E) was used to quantify the participant's level of acculturation. The scale, which consists of 30 items, is made up of two subscales that measure Mexican orientation (MOS) and Anglo orientation (AOS). Within the overall scale there are four factors that assess: (1) ethnic interaction; (2) language use and preference; (3) cultural heritage and ethnic behaviors; and (4) ethnic identity and classification. Items were scored on a Likert scale from 5 (*extremely or always*) to 1 (*not at all*). Evidence for internal consistency of the Anglo orientation subscale (coefficient alpha of .83) and the orientation towards the Mexican culture (coefficient alpha of .88) has been obtained (Jimenez et al., 2010).

Data Analysis

The sample demographics were characterized using descriptive statistics. The data obtained from the ARMSA-II was computed into a single linear score. This occurred by subtracting the mean MOS from the mean AOS. The resulting score could then be placed along a continuum that represented the participant's level of acculturation from very Anglo oriented (a high score) to very Mexican oriented (a low score) (Jimenez, et al, 2010). Acculturation scores were used to characterize the sample.

The tape recordings from the interviews were professionally transcribed into the language in which the interview was conducted. Transcripts in Spanish were then translated into English. Another researcher then validated the translation by spot-checking a third of the interview narratives in order to look for discrepancies; any discrepancies were discussed until consensus was reached.

General Data Analysis Procedures

For the larger sample of the study, field notes and verbatim audiotape transcripts were the basis for inductive qualitative content analysis; with the individual interview treated as a separate unit during the initial analysis. An interview was first read through several times prior to beginning the analysis. Once familiar with the text, notes and headings were written in the margins in order to describe the content. The first level of data analysis occurred by creating meaning units, “a constellation of words or statements that relate to the same central meaning” (Graneheim & Lundman, 2003, p. 106). The units were then condensed into condensed meaning units and finally into codes. The coded data were aggregated into themes that were created to link the underlying meanings together from the categories (Graneheim & Lundman, 2003).

Adolescent Data Analysis

A case analysis process was used for approaching the data collected from the smaller sub-sample of adolescents. Codes obtained from the general analysis of the data; verbatim narrative, statements, and themes from the adolescent cases were compared to and linked to the concepts and relationships of the Pender model. The two adolescent cases were analyzed separately allowing codes and themes to emerge independently. The two cases were then compared and contrasted looking for any overarching similarities or differences in barriers to exclusive breastfeeding amongst these two case studies.

Trustworthiness

Taking several supplementary steps ensured the reliability of this study (Elo & Kyngäs, 2007). An additional bilingual research assistant validated the translations of the interviews. As noted previously, spot-checking a third of the narrative to look for discrepancies between the meanings of the Spanish and English translations were conducted. This process helped ensure that the data were true to the original meaning of the interviews.

The research assistant conducting the interviews was appropriate because of her professional experience as a nurse, background working with the Latino population and ability to speak Spanish. In addition to listening carefully to the interview, the research assistant also observed how the questions were answered. This provided additional contextual information for

interpretation as well as clarification during the interview if there was an area of ambiguity. At the conclusion of the interview, the research assistant also summarized the content asking the participant(s) to verify and add any additional information if they felt it was necessary.

During the data analysis each member of the team performed independent coding of the data. Data coding was then mutually examined for the purpose of comparison, detection of patterns, and to identify themes, as well as search for rival explanations. The data were compared and contrasted until a mutually agreed upon analysis was ultimately achieved.

Results

The following section presents findings of the case analysis and is organized by Pender Model constructs. Additional comparison of the two cases is found in the Table.

Individual Characteristics and Experiences

Two female adolescent Latinas aged 16 and 18 years old both single but in committed relationships (with their infants father) participated in the study. Infants were roughly the same age and both were born by spontaneous vaginal birth. Demographic data demonstrated that both young women were born in Mexico; however, immigrated to the United States (participant one 3.5 years and participant two 11 years ago). Currently both lived with their parents and were attending their local public high school prior to, during, and after their respective pregnancies. The infant's fathers were also active in the infant and teens' lives. Participant one was very confident in her ability to breastfeed prior to her delivery. She stated that she was "100% confident" and physically "fine" to feed her infant. On the other hand, participant two stated that she was "scared and [I] wasn't really that confident" to breastfeed her infant. In fact, she was worried that the infant would hurt her, especially since she had a difficult time with the latch.

An acculturation score was calculated from the Revised Acculturation Scale for Mexican Americans – II score for both participants (See Appendix E). Participant one scored a -2.61 acculturation mean score. This is classified as a Level 1, which represents a "Very Mexican Orientation". Participant two scored a 0.73 acculturation mean score. This is classified as a Level 3, which represents "Slightly Anglo Oriented Bicultural". Participant two reported that she was not comfortable writing in Spanish, associated with both Anglos and Mexican, and did not have any contact with Mexico. Whereas participant one reported that she was most comfortable reading, writing and thinking in Spanish. In addition, she mainly associated only with Mexicans and did have frequent contact with Mexico.

Behavior-Specific Cognitions and Affect

Both adolescents were adamant in their belief that breastfeeding is healthier than formula and that it promotes physical and mental development. Participant one commented on breast milk's ability to help combat childhood illnesses while participant two pointed out the benefits on the infant's metabolism and that it is much less expensive than formula. Both adolescents also reported that their respective families were very supportive.

Both participants commented that they would have preferred taking their infants to school; however, neither school would allow that to occur. Participant one had a very supportive school environment. They provided her with a room to pump, access to cold storage for her expressed milk, and flexibility amongst the staff with her schedule. She said, "I have plenty of milk" and was "very happy" to be breastfeeding. Participant two did not have a supportive school environment. In the beginning they were; however, when the time came, they were unable to follow-through and provide a pumping location, access to cold storage, and the needed flexibility within her day without penalty. Despite those factors, she stressed that she would have liked to have breastfeed longer and more frequently. Unfortunately, she believed that she "wasn't producing enough milk" and was advised to discontinue breastfeeding due to antibiotic use for bronchitis.

Despite having different experiences, both adolescents commented on the connection made while breastfeeding and the intimate bond that was created between mother and child. Participant one commented on the infant's desire for closeness while participant two said it was "a really cool experience."

Both participants stressed the importance of support and were incredibly fortunate to have a familial support system behind them all the way. Mother's were the largest influence in making the decision to breastfeed and participant one mentioned that her mother informed her that she did not have a choice. Her boyfriend stated that breastfeeding was "tradition" in Mexico. In addition, participant one had the support of her school and teachers to help her continue breastfeeding. Participant two increased her confidence as she took classes biweekly for the month after delivery to gain experience with breastfeeding. As noted previously, she was advised by her health care provider to discontinue breastfeeding due to antibiotic use for bronchitis, an example of negative support given that most antibiotics are compatible with breastfeeding.

Behavioral Outcome

While participant two was unable to exclusively breastfeed, she was able to supplement formula with breast milk; however, participant one was able to exclusively breastfeed for six weeks. Comparison of the two participants revealed that both implicated school as a competing demand. Participant two also struggled with time management. Participant one was much more committed

to exclusive breastfeeding, largely in part to her role modeling: "Well, if my grandmother breastfed 11 babies, why wouldn't I breastfeed 1!" Participant two had intended to be more committed but her school and health situation greatly hindered her decisions.

Discussion

The results of the two interviews add to previous research regarding breastfeeding in the adolescent and Latina populations respectively. Few studies solely focus on adolescent Latinas, and the promotion of positive breastfeeding behaviors is important amongst this vulnerable population.

Participant one and two were both first time mothers with differing levels of initial confidence surrounding breastfeeding. Both were born in Mexico. According to Schlickau and Wilson (2005), mothers that migrated from Mexico had a greater chance of breastfeeding than their counterparts born in the United States. Their findings also supported that acculturation level does affect breastfeeding decisions. When looking at ARMSA-II scores, participant one was much less acculturated, and reported that she mainly used the language of her homeland country. Sussner et al. (2008) found that mothers that almost exclusively used their native language had two times the odds of initiating breastfeeding. Participant two's acculturation score also supported the literature, in that a higher score is negatively associated with all phases of breastfeeding (Gill, 2009). Despite wanting to breastfeed and believing that it was best, she was scared and not as confident. Even after going to classes, she still supplemented with formula. Her commitment level did not match that of participant one's.

Mossman and Lee-Dennis (2009) found that breastfeeding decisions and outcomes were significantly influenced by support from the adolescent's mother, boyfriend, knowledge and additional perceived barriers. Both participant one and participant two were very confident in their decision to breastfeed, despite, differing views on their initial ability. Participant one spoke much more of her family's influence and role modeling and was confident from the start.

Both adolescents were adamant in their belief that breastfeeding is healthier than formula and that it promotes physical and mental development; which is consistent with the previous literature (Nelson, 2009; Wambach & Koehn, 2004). Nelson also noted; however, that despite the adolescents belief, it is not always strong enough to influence their actions such as with participant two.

Dallas (2009) found a strong relationship between positive and consistent involvement by the adolescent father and the child's cognitive development and well-being. Both interviews revealed that the infants' fathers were active in the lives of both the infant and teen. Adolescent mothers that were able to maintain positive relationships with the fathers had a greater likelihood of providing their children with better preventative health care (Gill, 2009).

Participant two commented that she “wasn’t producing enough milk” and was advised to discontinue breastfeeding due to antibiotic usage for bronchitis. These may be examples of areas that could be targeted by culturally relevant interventions. Gill (2009) found that many Hispanic women supplemented breast milk with formula because they did not feel like they were producing enough milk. In another study, adolescents described needing to put the baby’s needs first and discontinuing breastfeeding helped them feel like they were doing this (Nelson, 2009). By frequently weighing the infants, mothers were able to see that their babies were gaining weight from the breast milk intake (Gill, 2009).

The teens in this study experienced both ends of the spectrum with regards to school support. Both girls had a great desire to return to school and finish and this factor played an important role in their ability to continue with breast milk. These findings supported the literature that school can be a pivotal point in either continuing breastfeeding or having to stop all together (Wambach & Cohen, 2009).

Both adolescents made the connection between breastfeeding and a special infant bond or closeness that developed. The literature suggests that this is a common finding and is usually considered one of the most important considerations when choosing whether or not to breastfeed. Wambach and Cohen (2009) discovered that closeness and bonding was reported by 65% of the adolescents in their study as a positive of breastfeeding. Adolescent mothers are at an increased risk for poor infant attachment, so breastfeeding is an important way to help promote and nurture the bond between infant and child. Both mothers seemed very comfortable with their decisions and showed no evidence of poor infant attachment that may be directly related to the breastfeeding.

Adolescent parents, despite their limited financial resources and social support, rely heavily on their families of origin as their primary sources of parenting assistance (Dallas, 2009). The teens’ mothers were reported to be the largest influence in making the decision to breastfeed and that supports Sussner et al. (2008) findings that attitudes, beliefs, and practices related to feeding are strongly influenced by older family members such as mothers and grandmothers.

Participant two increased her confidence as she took her postnatal classes at WIC, which is consistent with Gill (2009) and Sussner et al. (2008) findings that stressed the importance of postpartum support to promote and encourage breastfeeding. They found that classes correlated with higher initiation, duration, and exclusivity. Not all new mothers are familiar with the resources available in their community so it is important that the information is shared. For participant two, attending the WIC classes gave her the needed confidence to be able to breastfeed.

In summary, even while having a small sample, this study was comprised of two very different perspectives from adolescent Latinas. Each participant's story was able to enrich the data to provide additional viewpoints giving a more comprehensive and balanced analysis of the study.

Limitations

The study has some limitations since the results represent preliminary findings in an ongoing study. The study sample was smaller than anticipated due to slow enrollment in the larger study and lack of teen participants in the overall study sample. Conducting research with this age group presents multiple issues with participants' availability to interview including, but not limited to: transportation, school schedule and demands, child-care, and the unwillingness to participate in a study. The case analysis characterizes the outcomes of only two adolescent Latinas; therefore, the small sample size prohibits generalizing the findings to other groups of adolescent Latina mothers and the general population.

Implications for Nursing Practice and Research

This project will help to increase the knowledge base surrounding adolescent Latinas and the barriers to breastfeeding. It will also be able to add culturally relevant information to assist in the design of future research. Findings from this research are consistent with previous research; however, interventions still have not been created. This research supports the necessity of specific interventions that target the adolescent population. In particular, interventions are needed related to support during the school day, such as pumping location, cold storage facilities, and flexibility. Future research will test the effectiveness of these interventions in this vulnerable population.

In addition to information regarding breastfeeding, this project adds increased validity for the use of Pender's health promotion model with the adolescent population. The model appears to be applicable for framing research questions as well as the potential for developing theory-based interventions for practice.

Conclusions

There are three primary conclusions that can be gathered from this case analysis: (1) the findings of the two interviews support earlier published research. Adolescent breastfeeding success can be influenced by school support, confidence, acculturation, family, and peers; (2) the findings were consistent with the concepts identified in Pender's health promotion model; and (3) Pender's model appears to be an appropriate framework to use with the adolescent population, most likely due to focus on self-confidence, but also the concepts that reflect the social milieu within which the adolescent mother nurtures her infant.

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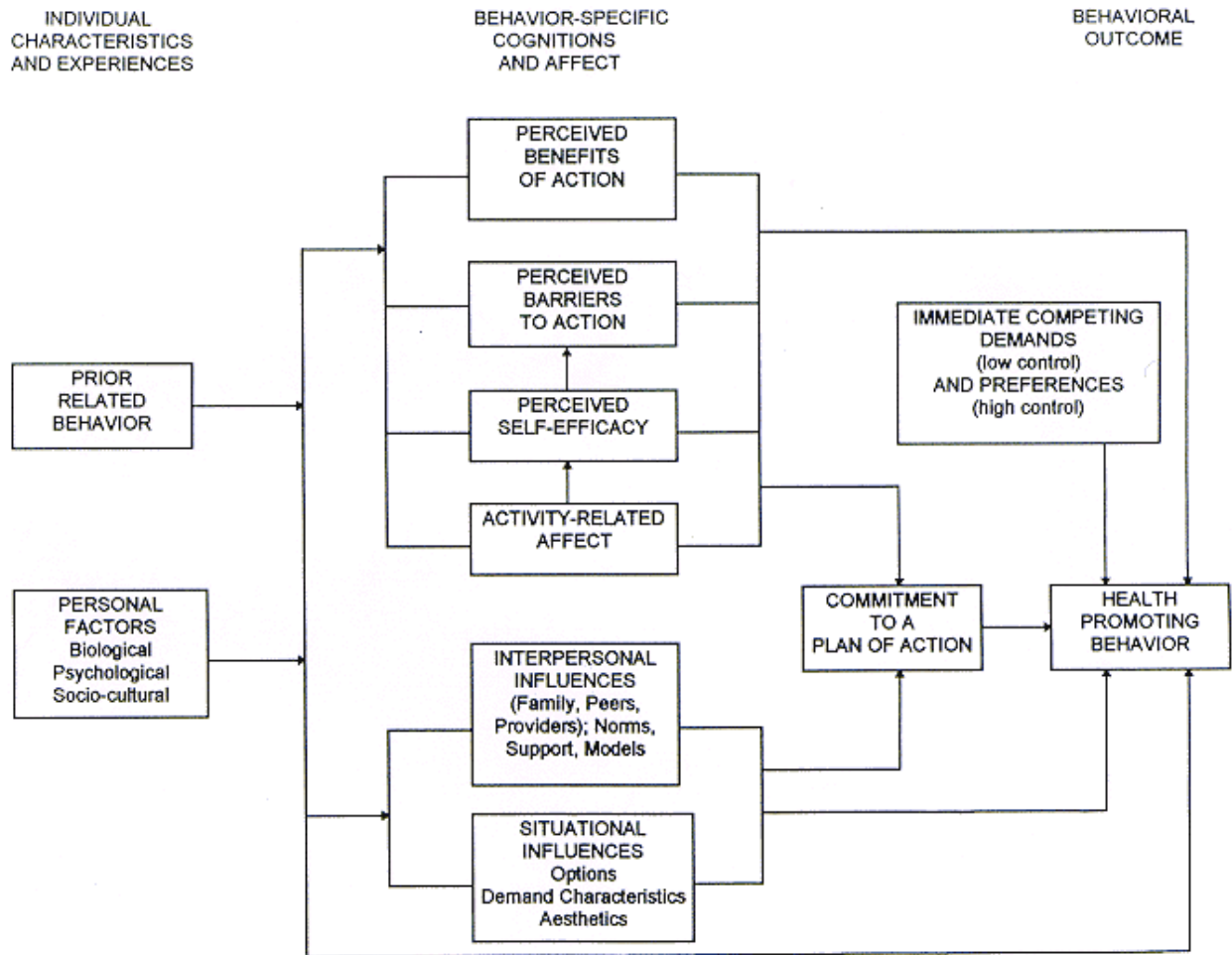
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TABLE 1 COMPARISON OF PENDER MODEL CONSTRUCTS AND CONCEPTS BY INTERVIEW

Construct/Concept	Interview One	Interview Two
Individual Characteristics and Behaviors		
Prior related behavior	Not applicable	Not applicable
Personal Factors		
Personal biological factors	18 years old Single (committed relationship) Infant 13 weeks at interview 3.7kg at delivery – spontaneous vaginal birth	16 years old Single Infant 4 months old on 4/27/11 6lbs 13 oz - spontaneous vaginal delivery
Personal psychological factors	“100% confident” “fine” physically	“scared and I wasn’t really that confident I could do it” Difficulty with latch
Personal socio-cultural factors	Acculturation score: -2.61 (low acculturation, high Mexican orientation – very Mexican oriented) Senior at a public high school	Acculturation score: 0.73 (level 3 – slightly Anglo-oriented, bicultural) Junior at a public high school
Cognitions and Affect		
Perceived benefits of action	Breastfeeding is healthier than formula and promotes physical and mental development	Breastfeeding is healthier than formula and promotes physical and mental development Less expensive than formula
Perceived barriers to action	Unable to take infant to school Daycare periodically gives breast milk and formula	Unable to take infant to school School does not allow adequate time, space, and storage for milk expression Lack of milk production

Activity-related affect	“very happy” to breastfeed Enjoys the infant’s desire for closeness	Breastfeeding “was a really cool experience” Enjoys the connection made with infant
Interpersonal influences	“tradition to breastfeed” in Mexico My mother told me I had to breastfeed School/teacher support	Encouraged by family and peers WIC classes Lack of school/teacher support
Situational influences	School resources for milk expression	Lack of resources at school for milk expression Antibiotic usage
Behavioral Outcomes		
Commitment to a plan of action	“Well, if my grandmother breastfed 11 babies, why wouldn’t I breastfed 1!”	“I would have continued to breastfeed him” if the school provided more resources and antibiotics were not taken
Immediate competing demands and preferences	Attending school Maintains milk expression schedule	Attending school Time management
Health promoting behavior	Maintained exclusive breastfeeding for 6 weeks Continues to express milk and breastfeed when possible	Unable to exclusively breastfeed Still believes it to be the best option

APPENDIX A PENDER'S HEALTH PROMOTION MODEL



Revised Health Promotion Model

NOTE: FROM HEALTH PROMOTION IN NURSING PRACTICE (5TH ED., P. 50) BY N.J. PENDER, C.L. MURDAUGH, AND M.A. PARSONS. UPPER SADDLE RIVER, NJ: PEARSON EDUCATION, INC. © 2005.

APPENDIX B DEMOGRAPHIC FORM

Please answer or check (X) in the blank regarding your personal information.

1. What is your age? _____ years
2. What is your family's country of origin?
_____ Mexico
_____ Puerto Rico
_____ Central America (Please specify): _____
_____ Cuba
_____ Guatemala
_____ South America (Please specify): _____
_____ Other
3. Where were you born? _____
4. Where were your parents born? _____
5. How long have you lived in the United States? _____
6. What is your preferred language spoken in your home? _____
7. What is the language you read in? Spanish _____ English _____ Both _____
8. What is the language you write in? Spanish _____ English _____ Both _____
9. What is your marital status?
_____ Married _____ Divorced
_____ Widowed _____ Separated
_____ Single _____ Living with partner
10. What's your highest level of completed education?
_____ Grade school _____ High school
_____ Partial college _____ Bachelor's degree
_____ Graduate degree _____ Other (Please specify): _____
11. What is your yearly family income? (circle)
 - a. \$10,000 or less
 - b. \$10,001 to \$25,000
 - c. \$25,001 to \$40,000
 - d. \$40,001 to \$55,000
 - e. \$55,001 to \$70,000
 - f. over \$70,000
 - g. N/A

12. Date of your baby's birthday: (mm/dd/yy) _____
13. Type of delivery: ____ vaginal ____ Cesarean Section (c/s)
If you had cesarean section, write reason why _____
14. Baby's gender(sex): _____ Male _____ Female
15. Baby's birth weight: _____
16. Number of weeks gestation when the baby was delivered? _____ weeks
17. Have you returned to work after childbirth? ____yes ____no
18. How do long do you plan to breastfeed your baby? _____

APPENDIX C INTERVIEW GUIDE (BASED ON PENDER'S HEALTH PROMOTION MODEL)

1. General breastfeeding beliefs, perceived benefits, and perceived barriers.
 - a. Tell me about your experiences of breastfeeding?
 - b. What do you believe about breastfeeding?
 - c. Did you have different beliefs about breastfeeding before you began to breastfeed?
 - d. Do you see benefits or positives to breastfeeding?
 - e. Do you see difficulties or problems with breastfeeding?
 - f. Do you have role models (family member or close friends) that have breastfed or you have seen breastfeed?
 - g. If so, did they influence you (or help) you make the decision to breastfeed?

2. Personal confidence and self-efficacy beliefs that impact breastfeeding.
 - a. How do you believe someone becomes confident or feels that they can breastfeed?
 - b. How confident or sure of yourself did you feel about breastfeeding when you began breastfeeding?
 - c. How did you feel about your overall physical ability to breastfeed when you began to breastfeed?
 - d. How did you feel about your overall emotional ability to breastfeed when you began to breastfeed?
 - e. Are these the same feelings that you have now about your ability to breastfeed?
 - f. How do you feel about yourself since you are or have breastfed?
 - g. Do you feel that your relationship with your baby is different since you are or have breastfed?
 - h. Do you feel that your relationship with significant others has changed since you are or have breastfed?"

3. Decisions to exclusively breastfeed
 - a. How did you make the decision to only breastfed your baby?
 - b. What helped you to make the decision to only breastfed your baby?
 - c. What has continued to help you make the choice to only breastfeed your baby?
 - d. Has your current lifestyle helped you to continue to only breastfeed your baby?
 - e. Has school or work influenced you to continue to only breastfeed your baby?
 - f. Is there a particular person or people in your life that has made it easier for you to only breastfeed your baby?
 - g. Has there been anything in your life that has made it more difficult to only breastfeed your baby?
 - h. Has there been any person in your life that has made it more difficult to only breastfeed your baby?
 - i. Are there benefits or positives to only breastfeeding your baby?
 - j. Are there drawbacks or negatives to only breastfeeding your baby?
 - k. Have there been changes in your life since starting to breastfeed and continuing to only breastfeed your baby?

OR

4. Decisions to mix breastfeeding and formula feeding
 - a. How did you make the decision to feed your baby both breast milk and formula?
 - b. Was there anything in your life that helped you make the decision to use formula along with breastfeeding your baby?
 - c. Has school or work influenced your decision to use formula along with breastfeeding your baby?
 - d. Is there a particular person or people in your life that has influenced your decision to use formula along with breastfeeding our baby?

- e. Has there been anything in your life that has made it more difficult to give formula along with breast milk to your baby?
- f. Has there been any person in your life that has made it more difficult to give formula along with breast milk to your baby?
- g. Are there benefits or positives to giving your baby formula along with breast milk?
- h. Are there drawbacks or negatives to giving your baby formula along with breast milk?
- i. Have there been changes in your life since starting to give both breast milk and formula to your baby?

OR

- 5. Decisions to stop breastfeeding and use formula
 - a. How did you make your decision to use only formula to feed your baby?
 - b. Was there anything in your life that happened as you made the decision to use formula only?
 - c. Was school or work influenced your decision to use formula only?
 - d. Is there a particular person or people in your life that has influenced your decision to use formula only?
 - e. Has there been anything in your life that has made it less difficult or easier to use formula only?
 - f. Has there been any person in your life that has made it less difficult or easier to give formula only?
 - g. Are there benefits or positives to giving your baby only formula?
 - h. Are there drawbacks or negatives to giving your baby only formula?
 - i. Have there been changes in your life since starting to use formula only to feed your baby?

6. Is there anything else that you would like to tell be about your breast feeding experiences, use of both breast-feeding and formula, or formula only that I did not ask you?

APPENDIX D

Breastfeeding Questions for Adolescents Participant #___; Date: _____

I. Education Probes – to be used during the collection of demographic information (record below):

- Demographic Item #9 – marital status: What is your living arrangement now?
(live alone, live with own family, other arrangement)

- Demographic Item #10: If participant indicates they completed grade 7-8 or Grade 9-12: What grade in school did you complete or partially complete?

- Were you pregnant while in school? __ Yes, __ No.
- Do you plan on returning to school? ___ Yes ___ No
- If you did continue with school while pregnant...
 - What services were available to assist with your pregnancy? Prenatal classes; breastfeeding classes, parenting classes; other health education
 - Were any of these available before your pregnancy?

II. Include the following questions in the interview where appropriate – suggested places are indicated in parentheses. Breastfeeding and continuing school:

- What were some of the difficulties at school with breastfeeding exclusively or partially? (interview questions 3-e; 4-b, 4-c; 5c)
- Were there any services available to you at school to assist with breastfeeding? (interview questions 3-e; 4-b, 4-c; 5c)
- If so, what type(s) of services? Examples below:
 - Were there breast pump supplies?

- Room set aside for pumping?
- Was there cold storage provided? A refrigerator?
- Flexibility with class schedule?
- How did these services impact your decisions regarding infant feeding?
- If more services/facilities were made available, would you have made a different decision regarding infant feeding?
- What type of child care did you utilize while you attended school?

III. Influence of father if he is in the picture: Include with 3-h; 4-d; or 5 -d

- Is the father involved with the care of your baby?

Appendix E

REVISED ACCULTURATION RATING SCALE FOR MEXICAN AMERICANS (ARSMA-II)

Response Options:

1 = not at all, 2 = very little/not very often, 3 = moderately, 4 = much/very often, 5 = extremely often/almost always

Items:

1. I speak Spanish.
2. I speak English
3. I enjoy speaking Spanish.
4. I associate with Anglos.
5. I associate with Mexicans (*specific*) and/or Mexican (*specific*) Americans
6. I enjoy listening to Spanish language music
7. I enjoy listening to English language music
8. I enjoy Spanish language TV.
9. I enjoy English language TV.
10. I enjoy English language movies.
11. I enjoy Spanish language movies
12. I enjoy reading in Spanish (e.g., books).
13. I enjoy reading in English (e.g., books).
14. I write in Spanish (e.g., letters).
15. I write in English.
16. My thinking is done in the English language.
17. My thinking is done in the Spanish language.
18. My contact with Mexico (*specific*) has been
19. My contact with the USA has been...

20. My father identifies himself as "Mexicano" (specific)
21. My mother identifies herself as "Mexicano" (specific)
22. My friends while I was growing up were of Mexican (specific) origin
23. My friends while I was growing up were of Anglo origin.
24. My family cooks Mexican (specific) foods
25. My friends now are of Anglo (specific) origin
26. My friends now are of Mexican (specific) origin.
27. I like to identify myself as an Anglo American
28. I like to identify myself as a Mexican American
29. I like to identify myself as a Mexican (specific).
30. I like to identify myself as an American.