

FACILITATORS TO BREASTFEEDING AMONG WIC PARTICIPANTS

By

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Abstract

Purpose: This study was developed to assess the facilitators to breastfeeding in the Pima County Women, Infants, and Children Program (WIC) in order to inform programming and improve breastfeeding rates.

Background: Although breastfeeding for at least six months has numerous maternal and child health benefits, and is promoted by WIC, WIC women have historically had low breastfeeding rates. Improving lower than desired breastfeeding rates in the Pima County WIC program is a priority.

Methods: A paper survey was administered to participants in the Pima County WIC program who had breastfed their youngest child under 12 months of age.

Results: The most frequent reported influence on the decision to breastfeed was family. Likewise, support of family or friends was the highest reported facilitator to breastfeeding continuation. The most important reason indicated for breastfeeding was infant health. The greatest barrier to breastfeeding continuation was concerns of low milk supply, followed by returning to work or school.

Conclusion: The Pima County WIC program can build upon the ways they support breastfeeding by incorporating family in education efforts and identifying what will facilitate participants' breastfeeding goals and participants overcome barriers to breastfeeding.

Introduction

Breastfeeding has many maternal and child health benefits and is promoted by the Pima County Women, Infants, and Children Program (WIC). However, Pima County WIC reports that rates of breastfeeding are lower than desired. Currently, Pima County WIC helps to facilitate participants’ breastfeeding by multiple methods (Table 1). WIC also provides free formula to mothers who choose to exclusively formula feed or to supplement breastfeeding with formula, also referred to as partial breastfeeding (Arizona Department of Health Services, 2017).

To support the Pima County Health Department’s goal of increasing breastfeeding rates among their WIC participants, this study will examine facilitators to breastfeeding among Pima County WIC participants by using a cross-sectional survey. The findings from this study will help to inform Pima County WIC about the factors that influence breastfeeding in the specific population they serve. Additionally, since this study is small in scale, it will provide the basis for further, more-detailed studies.

Table 1. Methods used to support breastfeeding mothers in Pima County WIC

Providing one-on-one breastfeeding education and support
Loaning hospital-grade breast pumps
Having an International Board Certified Lactation Consultant on staff at each clinic
Providing supplemental nutrition packages specialized for breastfeeding mothers
Maintaining a good relationship with nearby hospitals to support breastfeeding mothers
Offering breastfeeding classes in some clinics

Literature Review

Breastfeeding is associated with numerous improved infant and maternal health outcomes (Ip, 2007). For infants who are breastfed, there is a reduced risk of select infectious diseases and chronic diseases such as obesity, both types of diabetes, and leukemia (Ip, 2007). Women who have breastfed have a lower risk of developing postpartum depression, Type 2 diabetes, breast cancer, and ovarian cancer (Ip, 2007). Healthy People 2020, a set of national health objectives for the U.S., includes the objective of increasing the number of infants who are breastfed and the proportion of infants who are exclusively breastfed up to six months in age (Healthy People 2020). The World Health Organization (WHO) defines exclusive breastfeeding as breastfeeding without any additional food or drink supplementation, and exclusive breastfeeding is recommended for at least the first six months of an infant's life (WHO, 2016).

In the U.S., in 2011, 79% of newborns began breastfeeding, with 49% still breastfeeding at six months, and only 27% still breastfeeding at 12 months (Centers for Disease Control and Prevention, 2014). WIC participants are less likely to breastfeed than the overall population (Hedberg, 2013). In 2010, the Pediatric Nutrition Surveillance System reported that 63% of WIC newborns began breastfeeding, with 25% still breastfeeding at six months (as cited in Hedberg, 2013, p. 245). In national, regional, and state-level analyses of breastfeeding in WIC, all regions examined had a negative association between breastfeeding and WIC participation (Jensen, 2012). Additionally, breastfeeding was not positively associated with WIC participation in any state (Jensen, 2012). There are regional and state differences in rates, so state-specific WIC policies may lead to variability in WIC's breastfeeding promotion in each state (Jensen, 2012).

To explain the suboptimal rates of breastfeeding in WIC, the literature highlights various barriers to breastfeeding initiation and duration. A key issue in breastfeeding among WIC

mothers is that WIC's simultaneous support for breastfeeding and promotion of and receipt of rebates for formula can be viewed as contradictory (Hedberg, 2013; Holmes, Chin, Kaczorowski, & Howard, 2009). WIC provides mothers who choose to exclusively breastfeed with supplemental foods in their food package (United States Department of Agriculture (2016). However, after interviewing WIC mothers who breastfeed or exclusively breastfeed, Holmes et al. (2009) found that the WIC food package may not be valued as much as the free supplemental formula, affecting exclusive breastfeeding. This study also found that lack of information of the benefits of exclusive breastfeeding and the life demands that mothers face contribute to lower exclusive breastfeeding rates in WIC (Holmes et al., 2009). Among low-income women in a peer counseling program for breastfeeding, the most common reasons for discontinuation was the mother's preference or concerns of insufficient milk supply (Rozga, Kerver, & Olson, 2015). Difficulty breastfeeding in public and pain have been reported as negative aspects of breastfeeding among WIC mothers (Wojcicki, Gugig, Tran, Kathiravan, Holbrook, & Heyman, 2010).

Facilitators to breastfeeding in the WIC population have not been as detailed as barriers. A systematic review found that breastfeeding success in participants was tied to support groups and peer counseling (Hedberg, 2013). Interactions in WIC clinics have the potential to influence decisions to breastfeed, as health care workers at WIC can develop trusting relationships with participants and provide more postpartum support to new mothers who wish to breastfeed (Cricco-Lizza, 2005). The social environment that WIC mothers experience may also act as a facilitator to breastfeeding (Darfour-Oduro & Kim, 2014). Research investigating attitudes towards breastfeeding found that WIC participants in a majority ethnic minority sample of

pregnant women in San Francisco were more likely to value breastfeeding for its affordability and because their culture valued breastfeeding (Wojcicki et al., 2010).

Latina women have historically had high rates of initiation and duration of breastfeeding, but these rates vary by birthplace and time spent in the U.S. (Hendrick & Potter, 2016). In Mexican culture, breastfeeding is typically viewed as normal or preferred over formula-feeding (Hohl, Thompson, Escareño, & Duggan, 2016; Shviraga, 2011). For Mexican-origin women, a longer time spent living in the U.S. and education in the U.S. is associated with a shorter duration of exclusive breastfeeding (Hendrick & Potter, 2016). Nativity in Mexico combined with schooling received in Mexico indicated a significantly higher probability of breastfeeding at multiple time points after delivery (Hendrick & Potter, 2016). An important finding among Mexican-origin women that contradicts their high exclusive breastfeeding rates is that women who report closer ties to Mexican culture are more likely to supplement breastfeeding with formula (Hendrick & Potter, 2016).

Latina mothers share common barriers to breastfeeding with non-Latina mothers, but they also face their own unique barriers (Besore, 2014). Besore (2014), the Executive Director and Chief Executive Officer of the National Association of Hispanic Nurses reports that the most common barrier to breastfeeding faced by Latina mothers is returning to work or school. Barriers also include the objectification of the breast and the cultural importance of modesty (Besore, 2014; Shviraga, 2011). Another cultural factor important in Latino culture is the concept of “familismo” which highlights the importance of family influence (Besore, 2014). The support of family members and spouses/partners has been reported by Mexican-origin women living in the U.S. specifically as a positive influence on breastfeeding initiation and duration (Hohl, Thompson, Escareño, & Duggan, 2016; Shviraga, 2011).

Due to the benefits associated with breastfeeding, it is important to encourage mothers to initiate and continue breastfeeding, preferably exclusive breastfeeding, at least for six months, as they are able. Barriers to breastfeeding are well documented in the WIC population, but facilitators are not as clear. Additionally, Latina women face unique barriers to breastfeeding that women from other cultural backgrounds may not. In the predominantly Hispanic Pima County WIC, investigating facilitators to breastfeeding of this specific population may help WIC staff better target breastfeeding education and promotion to their participants.

Methods

To analyze facilitators to breastfeeding in participants in Pima County WIC, participants were surveyed about their breastfeeding experiences with their youngest child within 12 months of age. This study was developed in collaboration with the Pima County Health Department's WIC program and Nurse-Family Partnership in an effort to improve Pima County WIC and increase breastfeeding rates in the program. This quality improvement project did not require a human subjects review at the University of Arizona.

Setting

Pima County WIC had 2,368 participating infants as of October 2016 and for 2016, 77% of infants at all clinics were ever breastfed, 37% were breastfed for at least three months, and 27% were breastfed for at least six months. For exclusive breastfeeding, 17% were exclusively breastfed for at least three months, and 6% were exclusively breastfed for at least six months. These rates are lower than the U.S. rates of 79% ever breastfed and 49% breastfed for six months but higher than the national rates for WIC infants of 63% ever breastfed and 25% breastfed for six months (CDC, 2014; as cited in Hedberg, 2013 p. 245). To collect data, survey stations were set up at the four Pima County Health Department WIC clinics (Table 2). Originally, the

intention was to visit each clinic on two different weekdays and one Friday or Saturday, but days and times spent at each clinic were adjusted based on feedback from the employees on how busy the schedule was.

Table 2. Pima County WIC Clinic Visits

<u>Clinic</u>	<u>Day 1</u>	<u>Day 2</u>	<u>Day 3</u>
Abrams WIC and Food Plus Office	Monday 10:20A–12:20P	Wednesday 3:20 – 5:00P	Thursday 10:20A – 12:20P
South Office at Walter Rogers	Monday 8:00 – 10:00A	Thursday 8:00 – 10:00A	Friday 12:10 to 2:10P
East WIC and Food Plus Office	Monday 12:40 – 2:40P	Thursday 12:40 – 4:00P	Saturday 8:00 – 9:30A
Flowing Wells WIC and Food Plus Office	Tuesday 8:00 – 10:00A	Wednesday 1:00 – 3:00P	Saturday 10:00A–12:00 P

Pima County WIC is unique in that 69% of participating infants are Hispanic/Latino. Of breastfeeding infants, 66% are Hispanic/Latino. In Pima County, Arizona, 17% of residents identify as Hispanic/Latino, and approximately 91% of the population identifying as Hispanic/Latino also identified as Mexican-origin or Mexican-American (United States Census Bureau, 2015). In Tucson, Arizona, 44% identify as Hispanic/Latino, and 935% of those identifying as Hispanic/Latino identified as Mexican-origin or Mexican-American (United States Census Bureau, 2015).

Data Collection

Survey questions were created to address four key areas: breastfeeding, prenatal care, WIC, and demographics (Appendix A). In the breastfeeding section, questions focused on factors influencing breastfeeding initiation and continuation. A question was included about factors influencing discontinuation or thoughts of discontinuation. Answer choices followed four main

answer types: dichotomous (yes/no), choose all that apply, open-ended, and multiple choice. To maintain anonymity of participants, no personally identifying information was collected. In place of written consent, a disclosure form was used (Appendix B). Surveys and disclosure forms were available in English and Spanish. Spanish translation was provided by the Pima County Health Department (Appendices C & D).

Survey stations were set up on chairs, or tables when available, at each of the clinics at the times and days listed in Table 2. In total, 24.5 hours were spent visiting the WIC clinics. Participants were able to approach the survey station where they would be provided a description of the survey and asked if they met the inclusion criteria. Inclusion criteria included: not currently pregnant, having an infant under 12 months of age, breastfed the infant under 12 months of age, being 18 years old or older, and speaking English or Spanish. If inclusion criteria were met, participants were asked if they would like to participate and the disclosure form was explained. WIC employees also asked participants if they would be interested in taking a voluntary survey about breastfeeding. If participants were interested, they were sent to the survey station where it was confirmed they met the inclusion criteria. Once participants returned a completed survey to the station, they were able to select a small gift from a basket. Gifts included hair brushes, lotions, hand sanitizers, lip balms, shampoos, conditioners, and bath products.

Data Analysis

Surveys were numbered and responses were entered into a Microsoft Excel spreadsheet. Any open-ended responses in Spanish were entered in English. Age was calculated from the date of birth entered. Length of participation in WIC was converted to years. Multiple answer selections for race were entered as “Other” and the races selected were entered next to the

“Other” designation. If reported in days instead of weeks or months, infants’ ages were rounded up to the nearest week, expressed as a fraction of a month. Participants who reported currently breastfeeding and had never given the child formula were designated as exclusively breastfeeding while those currently breastfeeding who had previously given the child formula were designated as partially breastfeeding. Frequencies were calculated for most variables. SPSS software was used to determine significant correlations ($p < 0.05$) between specific variables of interest.

Results

In total, 38 surveys were completed. Two surveys were not included because participants answered for a child older than 12 months of age, resulting in 36 surveys analyzed. Most participants responded to all 18 questions. Median age of participants was 25 years and median age of infants was 4.25 months. Median time of participation in WIC among non-new clients was one year, with a range of one month to fourteen years.

Four surveys were given in Spanish and 32 were given in English. Fourteen different zip codes were represented by the participants. Demographic characteristics are detailed in Table 3. Of the 35 participants who responded to the question regarding Hispanic identity, 71% identified as Hispanic. For race, 21 participants identified as White, one identified as Black or African American, eight identified as Other, one did not know or was not sure about their race, and five did not respond. Six of the eight “Other” responses for race entered Hispanic, Spanish, or Mexican in the space next to the answer choice. Nearly half of the participants reported being unemployed ($n=15$), while most were employed full or part-time ($n=16$), and four were students. A majority of participants were on AHCCCS/Medicaid ($n=22$), five were uninsured, and the remainder were on private or Marketplace insurance. Most participants completed some college

or were college graduates while six were high school graduates, five completed some high school, and one completed elementary school.

Basic breastfeeding, WIC, and prenatal care characteristics are detailed in Table 4. Among facilitators (Table 5), family was the most common influence to the decision to breastfeed while support of family and/or friends was the most common reason that helped currently breastfeeding mothers to continue breastfeeding. Over half of participants cited their prenatal care provider as influencing their decision to breastfeed. Participation in WIC influenced 15 of the participants to breastfeed and WIC lactation consultants helped eight of the 18 currently breastfeeding mothers to continue breastfeeding. The most common barriers to breastfeeding (Table 6) were concerns that the child was not getting enough milk (n=12) or reported low production of milk in the “Other” response (n=4). Returning to work or school was the next most common barrier (n=9). Only three participants designated that ease of use of formula provided by WIC was a barrier to breastfeeding. Some participants did not indicate any reasons to consider not breastfeeding or to have made them stop breastfeeding. No significant correlation ($p<0.05$) was found between length of participation in WIC or identifying as Hispanic and the following:

- Influence of WIC participation on decision to breastfeed
- Influence of family on decision to breastfeed
- Breastfeeding duration
- Currently breastfeeding and formula feeding
- WIC lactation consultants helping to continue breastfeeding
- Support of friends/family helping to continue breastfeeding
- Peer counseling helping to continue breastfeeding

Table 3. Demographic Information of Participants

	<u>n (%)</u>
<u>Age</u>	
18-20	6 (17.6)
21-25	12 (35.3)
25-36	16 (47.1)
<u>Ethnicity/race</u>	
Hispanic/Latina/Spanish Origin	25 (71.4)
White	21 (67.7)
Black/African American	1 (3.22)
Other	8 (25.8)
<u>Employment</u>	
Employed full-time	8 (22.9)
Employed part-time	8 (22.9)
Unemployed	15 (42.9)
Student	4 (11.4)
<u>Health Insurance</u>	
Private/Marketplace	8 (22.9)
AHCCCS/Medicaid	22 (62.9)
Uninsured	5 (14.3)
<u>Education</u>	
Grades 1 through 8 (elementary)	1 (2.86)
Grades 9 through 11 (some high school)	5 (14.3)
Grade 12 or GED (high school graduate)	6 (17.1)
College 1 year to 3 years (some college)	15 (42.9)
College 4 years or more (college graduate)	8 (22.9)

Table 4. Breastfeeding, WIC, and Prenatal Care Characteristics

	<u>n (%)</u>
Currently breastfeeding	18 (51.4)
Exclusively breastfeeding	7 (38.9)
Partially breastfeeding	11 (61.1)
Ever given child formula	29 (80.6)
Ever received formula from WIC	25 (69.4)
Infants six months of age or older	13 (36.1)
Breastfed at least six months	8 (61.5)
Stopped being breastfed at 1 month	1 (7.8)
Stopped being breastfed at 3 months	1 (7.8)
Stopped being breastfed at 4 months	1 (7.8)
Stopped being breastfed at 5 months	2 (15.4)
Infants less than six months of age	23 (63.9)
Currently breastfed	12 (52.2)
Stopped being breastfed at <1 month	5 (21.7)
Stopped being breastfed at 1 month	2 (8.7)
Stopped being breastfed at 2 months	3 (13.0)
Stopped being breastfed at 3 months	1 (4.3)
Received prenatal care	36 (100.0)
	Median
Length of breastfeeding duration	2 months
Age of child when first given formula	1 month

Table 5. Descriptive Statistics of Breastfeeding Facilitators

<u>Characteristic</u>	<u>n (%)</u>
Currently breastfeeding	18 (51.4)
Received prenatal care	36 (100.0)
<u>Influenced decision to breastfeed:</u>	
Participation in WIC	15 (41.7)
Doctor/nurse	18 (50.0)
Family	26 (72.2)
Friends	14 (38.9)
Significant other/partner/spouse	16 (44.4)
Prenatal care provider	20 (55.6)
Other	4 (11.1)
Breastfed other child	1 (25.0)
Food allergy of other child	1 (25.0)
Belief that breastfeeding is natural	1 (25.0)
<u>Helped to continue breastfeeding (if currently breastfeeding):</u>	
WIC lactation consultants	8 (44.4)
Non-WIC lactation consultants	3 (16.7)
Support of friends and/or family	12 (66.7)
Peer counseling	3 (16.7)
Other	3 (16.7)

Table 6. Descriptive Statistics of Breastfeeding Barriers

<u>Barrier</u>	<u>n (%)</u>
Pain/discomfort while breastfeeding	8 (22.2)
Concerns child not getting enough milk	12 (33.3)
Return to work or school	9 (25.0)
Lack of community support for breastfeeding mothers	4 (11.1)
Lack of family support	1 (2.8)
Easier to use formula provided by WIC	3 (8.3)
Other	5 (13.9)

The open-ended question, “What was the most important reason you decided to breastfeed?” yielded many different responses. Of the 34 responses to this question, 12 included health and 11 included nutrition as the most important reasons to breastfeed. Some responses included multiple reasons. Topics mentioned in responses are detailed in Table 7. Examples of the variation of responses are listed in Table 8.

Table 7. Frequency of Topics Indicated as the Most Important Reason for Decision to Breastfeed

<u>Reason</u>	<u>Number of responses including reason (%)</u>
Health of child	12 (35.3)
Child's nutrition	11 (32.4)
Bonding	3 (8.8)
Financial	2 (5.9)
Prevent child from getting sick	2 (5.9)
Child growth/development	3 (8.8)
Natural choice	2 (5.9)
Best choice/better than formula	2 (5.9)
Convenience/ease	2 (5.9)
General benefits	4 (11.8)
Other	4 (11.8)

Table 8. Selected Responses for Most Important Reason for Decision to Breastfeed

“Healthy babies are breastfed”
“I wanted to give him the best nutrition for as long as possible”
“I wanted to because I heard it's better for baby's health”
“She needs my breastmilk”
“For the antibodies in breastmilk”
“Baby boy enjoys the time better”

Discussion

Survey Sample

The percentage of participants identifying as Hispanic was 71%, and, assuming infants of these participants were also Hispanic, this number is similar to the 69% of Hispanic infants in the Pima County WIC program and 66% of breastfed infants who are Hispanic. This is also consistent with the historically high rates of breastfeeding among Hispanic/Latina women. Of infants older than six months of age, 62% (n=8) were breastfed for at least six months, in accordance with current WHO recommendations (WHO, 2016). Of infants younger than six months of age, 48% (n=11) stopped breastfeeding at three months of age or less, with most stopping before one month of age.

Facilitators to Breastfeeding

The most important factor influencing the decision to breastfeed as indicated by participants was family. This finding was anticipated, as a majority of Pima County WIC participants overall and in this sample identify as Hispanic, and Hispanic women report that family influences their decision to breastfeed (Hohl et al., 2016; Shviraga, 2011). Only one participant identified a lack of family support as a barrier, reinforcing the idea that family is more often a positive influence than a negative influence on breastfeeding in a majority-Hispanic population. Since Mexican-origin women with close ties to Mexican culture are more likely to supplement breastfeeding with formula, it was anticipated that there would be a correlation between identifying as Hispanic and supplementing with formula in this sample, but no significant correlation was found (Hendrick & Potter, 2016).

In WIC, breastfeeding success has been tied to support groups and peer counseling. Interactions with WIC employees and the environment of WIC clinics have been shown to

influence the decision to breastfeed (Cricco-Lizza, 2005; Darfour-Oduro & Kim, 2014; Hedberg, 2013). While no significant correlation was found between length of participation in WIC and breastfeeding duration, the results from this study indicate that participation in WIC has influenced many participants to decide to breastfeed and WIC lactation consultants have helped many participants to continue breastfeeding. Low indication of the helpfulness of peer counseling on breastfeeding continuation could be due to many participants never engaging in peer counseling for breastfeeding. While these numbers are positive, there may be room for improvement in WIC programming to greater influence participants' breastfeeding initiation and continuation.

Barriers to Breastfeeding

The most common barrier to breastfeeding reported involved concerns of milk supply and production followed by returning to work or school and pain or discomfort while breastfeeding. These findings are consistent with the peer-reviewed literature. In a study among low-income women participating in peer-counseling, one of the top reasons for stopping breastfeeding was milk supply concerns (Rozga, Kerver, & Olson, 2015). Among WIC women specifically, Wojcicki and colleagues(2010) reported that pain while breastfeeding and difficulty breastfeeding in public were problematic; however, while pain was consistent with these findings, only four participants reported lack of community support (lactation rooms, ability to breastfeed in public locations) as a reason for discontinuation. Among Latina women, returning to work or school is a common barrier to breastfeeding, which is consistent with these findings (Besore, 2014).

Holmes and authors (2009) reported that lack of information of benefits of exclusive breastfeeding contribute to lower exclusive breastfeeding rates among WIC women, but the

answers reported as the most important reason for deciding to breastfeed indicate a clear understanding among participants of the benefits of breastfeeding. Further studies evaluating understanding of the benefits of exclusive breastfeeding, as opposed to partial breastfeeding, would be needed to determine if enough information about exclusive breastfeeding is provided to WIC participants. Additionally, considering participants' other life demands such as work, school, and other children, could help determine if exclusive breastfeeding is feasible or if partial breastfeeding would better fit participant's needs.

Implications for WIC Programming

Ultimately, these findings may help WIC staff to gain a better understanding of facilitators to breastfeeding among the clients they serve in order to improve breastfeeding rates. Including family and a partner/spouse/significant other in breastfeeding education have been recommended by others and may increase breastfeeding duration since family is an important influence on breastfeeding, is a large source of support, and can help mothers overcome breastfeeding barriers (Hedberg, 2013; Hohl et al., 2016; Wambach, Domian, Page-Goertz, Wurtz, & Hoffman, 2016). Assessing how much a WIC client values their family's opinions on breastfeeding decisions may help WIC staff to determine how to best incorporate the family to ensure they will serve as a positive influence to breastfeeding.

Forty-four percent of this study sample indicated that their partner, spouse, or significant other influenced their decision to breastfeed. Since partners have the ability to influence breastfeeding decisions in women in Pima County WIC, WIC staff have the ability to help fathers to continue to understand how they can contribute to breastfeeding after the decision to breastfeed is made (Rempel & Rempel, 2011). This contribution could be related to feeding but

could also take the shape of assisting to reduce large and small sources of stress for the mother so she is able to breastfeed with greater ease (Rempel & Rempel, 2011).

Since eight participants (22.2%) stopped breastfeeding when their infant was one month of age or younger, maintaining close relationships with local hospitals is essential to supporting new breastfeeding mothers. One strength of Pima County WIC is that the program already has established relationships with local hospitals, so WIC and hospital staff can work together to prioritize breastfeeding after delivery, possibly by maximizing the time mothers and infants are together post-delivery and encouraging skin-to-skin contact (Hedberg, 2013). Delaying the infant's first bath in order to promote skin-to-skin contact can also improve in-hospital breastfeeding rates (Preer, Pisegna, Cook, Henri, & Philipp, 2013). Participants in this study valued the influence of doctors, nurses, prenatal care providers, and WIC in their breastfeeding experiences, so continuing to work closely with local hospitals to promote breastfeeding is effective.

Breastfeeding can be challenging for mothers to sustain for the recommended time, so the decision to initiate and continue breastfeeding is not always simple. While it is easy to encourage all women to breastfeed exclusively for six months, it is important to remember that mothers may believe this choice is not possible for them. Mothers may experience factors that they feel are incompatible with exclusive or partial breastfeeding, such as work, school, caring for other children, or general stress. It is recommended that WIC work with women during pregnancy and the first month of the child's life to clearly understand the client's breastfeeding intentions and goals and identify what will help them to achieve these goals and mitigate any barriers.

Future Studies

More research is needed in Pima County WIC to determine if this sample effectively represents the entire program. Additionally, more detailed information on how family, medical professionals, and WIC influence breastfeeding could be useful in tailoring the program to the population. Future studies in Pima County WIC could capture a more representative sample of participants by extending the time frame for data collection and changing the way the survey is presented. To obtain a larger sample size, data could be collected over a three-month period. To reach more mothers and make the survey process easier for mothers, WIC employees could offer the survey when participants check in and allow them to complete it before or after their appointment based on their preference. Instead of a paper survey, an electronic survey available on mobile devices or the WIC computers could make it easier to complete with one hand while holding a small child. Additionally, incentives for the survey could be more breastfeeding-friendly. To better suit currently breastfeeding mothers, unscented body washes and body lotions could be available. Hand sanitizers, lip balms, and hairbrushes were the most popular items and participants expressed gratitude for personal care products as incentives. For the purposes of this small-scale study, the paper survey with small incentives worked well.

Conclusion

These findings indicate that the most important influence on breastfeeding initiation and the most important facilitator to continued breastfeeding is the support of family. Additionally, the most important reason why mothers chose to breastfeed is the health and nutrition of their infants. Future research can better detail specifically how family support and the WIC program influence breastfeeding choices. To better target the participants of Pima County WIC, dialogue about what influences clients' breastfeeding choices and what will help them overcome any

breastfeeding barriers can be initiated, families and partners can be included in breastfeeding education, and Pima County WIC can maintain and build upon the current ways they support breastfeeding.

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Appendix A

FACILITATORS TO BREASTFEEDING AMONG WIC PARTICIPANTS SURVEY

If you would like help reading the questions, please let us know.

Breastfeeding

1. What is the age of your child under 12 months? _____ months
 - A. Have you ever breastfed this child?
 - Yes
 - No
 - B. Are you still breastfeeding now?
 - Yes
 - No - Age of your child when you stopped breastfeeding _____ months
 - C. Have you ever given this child formula?
 - Yes - Child's age when you first gave them formula _____ months
 - No
2. What was the MOST IMPORTANT reason you decided to breastfeed?

3. Did any of the following influence your decision to breastfeed? (Please choose all that apply)
 - Participation in WIC
 - Doctor/Nurse
 - Family
 - Friends
 - Significant other/partner/spouse
 - Other _____
4. Have any of the following helped you to continue breastfeeding? (Please choose all that apply)
 - Not currently breastfeeding
 - WIC Lactation consultants
 - Non-WIC lactation consultants
 - Support of friends and/or family
 - Peer counseling
 - Other _____
5. Have any of the following ever made you consider not breastfeeding/made you stop breastfeeding? (Please choose all that apply)
 - Pain or discomfort while breastfeeding
 - Concerns that your child is not getting enough milk

- Return to work or school
- Lack of community support (lactation rooms, ability to breastfeed in public locations) for breastfeeding mothers
- Lack of family support
- Lack of partner support
- Easier to use formula provided by WIC
- Other _____

Prenatal Care

6. Did you receive prenatal care?

- Yes
- No

7. What trimester did you begin prenatal care?

- 1st
- 2nd
- 3rd
- I did not receive prenatal care
- I do not remember

8. Did your prenatal care provider influence your decision to breastfeed?

- Yes
- No
- I did not receive prenatal care

WIC

9. How long have you participated in WIC? _____

- I am a new WIC client

10. Have you ever received formula from WIC?

- Yes
- No

Background

11. What is your date of birth? ____/____/____
MM DD YYYY

12. Are you currently pregnant?

- Yes
- No

13. What ZIP code do you live in? _____

14. What is your employment status?

- Employed full-time
- Employed part-time
- Unemployed

- Student
15. Who provides your health insurance? (Please choose all that apply)
- Private or Marketplace
 - Medicare
 - AHCCCS/Medicaid (includes ALTCS and KidsCare)
 - Military health care
 - Indian Health Services
 - I don't have health insurance
 - I don't know/Not sure
 - Other _____
16. Are you Hispanic, Latina, or of Spanish Origin?
- Yes
 - No
17. What is your race?
- White
 - Black or African American
 - American Indian or Alaska Native
 - Asian
 - Pacific Islander
 - Other _____
 - Don't know/Not sure
18. What is the highest level of education you completed?
- Never attended school or only attended kindergarten
 - Grades 1 through 8 (elementary)
 - Grades 9 through 11 (some high school)
 - Grade 12 or GED (high school graduate)
 - College 1 year to 3 years (some college or technical school)
 - College 4 years or more (college graduate)

THANK YOU FOR COMPLETING THIS SURVEY

Appendix B

PARTICIPANT DISCLOSURE**FACILITATORS TO BREASTFEEDING AMONG WIC PARTICIPANTS
SURVEY**

You are invited to complete a short survey on breastfeeding. This survey involves research that has no risks but can benefit WIC. This survey is being done by The University of Arizona and the Pima County Health Department and should take about 10 minutes to finish. Your survey answers will be kept private, as we are not collecting any identifying information, besides your Zip Code. Your feedback is very important to the Pima County Health Department and your answers will be used to improve the WIC program. As a sign of our appreciation for your time, we invite you to pick a gift from the basket. It is up to you to do the survey, as participating is strictly voluntary. You may skip any questions that you do not want to answer or stop doing the survey at any time without penalty. You may also choose not to do the survey without penalty.

Only complete the survey if you:**Are not pregnant****Have an infant 12 months of age or younger****Breastfed your infant 12 months of age or younger****Are 18 years of age or older****Speak English or Spanish**

If you have any questions about this survey, you can call Nicole Lorona at (909) 262-1129. You may also contact the Human Subjects Protection Program at <http://rgw.arizona.edu/compliance/human-subjects-protection-program>.

Thank you for taking the time to complete this survey. By completing the survey, you have provided your consent to allow me to use your responses for research purposes.

Appendix C

ENCUESTA SOBRE LOS FACTORES QUE FACILITAN LA LACTACION ENTRE LOS PARTICIPANTES DEL PROGRAMA WIC

Por favor avísenos si necesita ayuda para leer las preguntas.

Lactación

1. ¿Qué edad tiene su niño(a) menor de 12 meses? _____ meses
 - A. ¿Alguna vez amamantó a este niño(a)?
 - Si
 - No
 - B. ¿Sigue amamantando en este momento?
 - Si
 - No – Edad de su niño(a) cuando dejo de amamantarlo _____ meses
 - C. ¿Alguna vez le ha dado fórmula a este niño(a)?
 - Si – La edad de su niño(a) cuando le dio fórmula por primera vez _____ meses
 - No
2. ¿Cuál fue la razón MAS IMPORTANTE por la cual decidió amamantar?
3. ¿Han influido algunos de los siguientes elementos en su decisión de amamantar? (Favor de escoger todos los que aplican.)
 - Participación en el programa WIC
 - Médico o enfermera(o)
 - Familia
 - Amigos
 - Pareja/esposo(a)
 - Otro _____
4. ¿Ha recibido apoyo de algunas de las siguientes personas para seguir amamantando? (Favor de escoger todos los que aplican.)
 - No estoy amamantando en este momento
 - Consultantes de Lactancia del Programa WIC
 - Consultantes de Lactancia de otros programas
 - Apoyo de amigos y/o familia
 - Consejería entre pares
 - Otro _____

5. ¿Han influido algunos de los siguientes factores en su decisión de considerar dejar de amamantar o dejar de amamantar? (Favor de escoger todos los que aplican.)

- Dolor o incomodidad durante lactación
 - Preocupación que su bebe no está recibiendo suficiente leche
 - Regreso al trabajo o escuela
 - Falta de apoyo de la comunidad (salas de lactancia, habilidad de amamantar en público) para mamás lactantes
 - Falta de apoyo familiar
 - Falta de apoyo de la pareja
 - Es más fácil usar formula proveída por el Programa WIC
 - Otro _____
-

Cuidado Prenatal

6. ¿Recibió cuidado prenatal?

- Si
- No

7. ¿Durante cual trimestre inició el cuidado prenatal?

- 1°
- 2°
- 3°
- No recibí cuidado prenatal
- No me acuerdo

8. ¿Influyó su proveedor de cuidado prenatal en su decisión de amamantar?

- Si
- No
- No recibí cuidado prenatal

WIC

9. ¿Cuánto tiempo tiene participando en el programa WIC? _____

- Soy cliente nuevo

10. ¿Alguna vez recibió formula del programa WIC?

- Si
- No

Información General

11. ¿Cuál es su fecha de nacimiento? ____/____/____
Dia Mes Año

12. ¿Está embarazada?

- Si
- No

13. ¿En qué código postal vive? _____

14. ¿Cuál es su estatus de empleo?
- Trabajo tiempo completo
 - Trabajo medio tiempo
 - No tengo empleo
 - Soy estudiante
15. ¿Quién es su proveedor de seguro médico? (Favor de escoger todos los que aplican.)
- Privado o Marketplace
 - Medicare
 - AHCCCS/Medicaid (incluye ALTCS y KidsCare)
 - Cuidado médico del ejercito/militar
 - Indian Health Services
 - No tengo seguro médico
 - No se/no estoy segura
 - Otro _____
16. ¿Eres hispana, latina o de origen español?
- Si
 - No
17. ¿Cuál es su raza?
- Blanca
 - Negra o Afroamericana
 - Indígena Americana o Nativa de Alaska
 - Asiática
 - Isleña del Pacífico
 - Otro _____
 - No se/no estoy segura
18. ¿Cuál es su máximo nivel de estudios?
- Nunca asistí a la escuela
 - Grados 1 al 8 (primaria y secundaria)
 - Grados 9 al 11 (algunos años de preparatoria)
 - Grado 12 o GED (me gradué de la preparatoria)
 - Universidad 1 año a 3 años (algunos años de universidad)
 - Universidad 4 años o más (termine mi carrera)

GRACIAS POR SU PARTICIPACION

Appendix D

DECLARACION DE PARTICIPACION**ENCUESTA SOBRE LOS FACTORES QUE FACILITAN LA LACTACION ENTRE LOS PARTICIPANTES DEL PROGRAMA WIC**

Le invitamos a completar una breve encuesta sobre la lactación. Esta encuesta forma parte de un estudio, el cual no tienen ningún riesgo, pero puede beneficiar el programa WIC. Esta encuesta se está llevando a cabo por la Universidad de Arizona y el Departamento de Salud del Condado Pima y tomará aproximadamente 10 minutos para completar. Sus respuestas se mantendrán privadas ya que no se recolectará información que identifica a los encuestados además del código postal. Su punto de vista es muy importante para el Departamento de Salud del Condado Pima, y se usarán sus respuestas para mejorar el programa WIC. Para agradecer su participación, le invitamos a escoger un regalo de la canasta. La participación en esta encuesta es totalmente voluntaria. Puede dejar en blanco cualquier pregunta que no desee contestar o puede parar en el momento que usted lo desee sin ninguna consecuencia. También puede elegir no participar en la encuesta sin ninguna consecuencia.

Favor de completar le encuesta solamente si usted:**No está embarazada****Tiene un bebe menos de 12 meses****Amamantó a su bebe hasta los 12 meses****Tiene 18 años de edad o mas****Habla inglés o español**

Si tiene alguna pregunta sobre esta encuesta, se puede comunicar con Nicole Lorona al (909) 262-1129. También puede contactar al Programa de Protección de Sujetos Humanos en: <http://rgw.arizona.edu/compliance/human-subjects-protection-program>.

Gracias por tomar el tiempo de completar la encuesta. Al participar en esta encuesta, ha proporcionado su consentimiento para darme permiso de utilizar sus respuestas con fines de investigación.