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The Factors Influencing the Breastfeeding Practices of the Women Living in the Bateyes of the Dominican Republic

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Abstract

Background: Breast milk provides both nutrition and immune protection for the developing child. Current reports of exclusive breastfeeding rates in the Dominican Republic (DR) are low (4.7%). The batey communities of the DR, in which Haitian migrant workers live in impoverished conditions, are of particular interest in terms of breastfeeding in the resource-limited setting. The aim of this study was to examine the factors underlying the decision-making processes related to breastfeeding for the women living in the bateyes of the DR.

Methods: This was a qualitative study. We conducted 65 in-person interviews in 16 bateyes in the region surrounding La Romana, Dominican Republic, of women (≥18 years of age) who had given birth in the last 2 years. Interviews were conducted from July-August 2017. We used the grounded theory approach to identify themes.

Results: In our sample (N=65), any breastfeeding was prevalent (86.1%; n=56), but the six-month exclusive breastfeeding rate was low (9.2%; n=6), and formula supplementation was high (69.2%; n=45). Many mothers perceived breast milk as the ideal form of nourishment for infants (58.5%; n=38), however some mothers expressed a desire to also feed formula in order to supplement the breast milk (26.2%; n=17).

Conclusions: Although many of the women of the bateyes breastfeed their infants and know of the benefits of breastfeeding, misconceptions as to the quality and quantity of breast milk do still exist. Education and outreach efforts regarding the benefits of exclusive breastfeeding could enhance adequate and affordable nutrition options for the infants of the bateyes.

Key Words breast feeding, nutrition, infant feeding behavior, food preferences, global health

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BACKGROUND

The bateyes were established originally as temporary housing for the Haitian migrants who came to work on the sugarcane plantations in the Dominican Republic (DR), which evolved into year-long settlements. The people live in severe impoverishment, and children under the age of five, at a critical period of development, are especially impacted by depleted nutrition.[1] Due to the unofficial sociopolitical status of the workers and their children, resources are severely lacking.[1-3] Healthcare is received primarily from charity provided by The Good Samaritan Hospital located in La Romana, or from the free clinics set up by the rotating mission trips.[4]

Lower respiratory infections are ranked at number three for top causes of the most deaths in the DR, according to 2015 data from the Institute for Health Metrics and Evaluation.[5] Furthermore, child and maternal malnutrition predisposes to risk factors such as diarrhea, lower respiratory infections, and nutritional disabilities, thereby making it a top cause of disability (as measured by disability-adjusted life years, or DALYs) in the developing world.[6,7] As such, the United Nations General Assembly listed addressing poverty and related issues (including food insecurity and wellbeing) in the top three Sustainable Development Goals.[8]

Breast milk is an excellent source of nutrition for infants and toddlers during the first two years of life, providing them with crucial immune support and exposure to essential vitamins and minerals.[9-11] The WHO guidelines on breastfeeding recommend exclusive breastfeeding for the first six months of life, and continued breastfeeding with complementary feeding for up to the first two years of life.[10,12] Several studies have documented reduction in illness (e.g. diarrhea and lower respiratory infections) in breastfed infants and toddlers.[12,13] For those in resource-limited settings, interventions aimed at improving nutrition, specifically directed at breastfeeding, have shown a significant positive effect on children's health outcomes.[14,15] The Baby-Friendly Hospital Initiative (BFHI), established in 1991 by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), is geared towards promoting breastfeeding, beginning in the setting of the labor and delivery room of the hospital.[16] Although there are some BFHI-certified hospitals in the DR, as of 2014, the prevalence of exclusive breastfeeding (EBF) for the first six months of life in the DR was 4.7%, which was a decrease from the 8% rate of prevalence in 2010.[7] Given this low, and decreasing, rate of EBF in the DR, there was a need to explore the barriers to the practice of EBF.

Furthermore, a couple studies in recent years highlight the low (and decreasing) rates of EBF in the DR, in the setting of a trend for early water introduction, compared with increasing rates of EBF in neighboring Haiti, with a trend for decreasing non-breastmilk supplements.[17] Additionally, it was found that prelacteal feeding patterns varied between the two countries, in an association with EBF.[18] This underscores the need for further exploration of the thought processes underlying the feeding practices of the mothers in the DR.

Accordingly, this study sought to identify the underlying factors associated with the experiences and decision-making processes related among the batey (DR) residents. Factors explored include: the thought processes before and after giving birth, support systems, sources of influence, specific practices such as shared breastfeeding, feeding decisions related to sickness of mother or infant, and reasoning for stopping or choosing not to breastfeed.

METHODS

This was a qualitative study using in-person interviews with the goal of gathering information related to breastfeeding practices within the target population. The study was approved by our Institutional Review Board.

In-person interviews were conducted with women living in the batey communities surrounding La Romana, DR, in the time period from July-August 2017. The location was chosen due to the researchers' institutional ties to the Good Samaritan Hospital, which is based in La Romana, and serves the bateyes of the surrounding area. Participants were recruited from a total of 16 different bateyes in this region. Inclusion criteria for the study were women (≥18 years of age) living in the bateyes surrounding La Romana, DR, who had had at least one live birth within the last two years. The interview was modeled on the interview template found in Safon's (2016) paper[19], which revealed perceptions of insufficient milk among mothers in a community in Nicaragua. This interview template was chosen as a model for our study's interview due to the similarities in the study design and population. Interview questions covered content on the delivery setting, thoughts related to breastfeeding before and after giving birth, individuals of influence, and specific types of breastfeeding decisions, such as in the setting of infant or mother illness, as well as the practice of expressing breast milk. Demographic data was also collected, including age, occupation, highest level of education achieved, type of delivery, and the number of children in the home.

A translator fluent in Spanish, Haitian Creole, and English was used to obtain informed consent and conduct the interview, with the first and second authors present. Participants were recruited with the help of The Good Samaritan Hospital in La Romana, DR, which provided access to the bateyes through their established community connections, specifically, their Health Promoter program. The Health Promoter program consists of individuals designated within each batey community in connection with The Good Samaritan Hospital. The promoters are trained and paid by the hospital and serve as liaisons between the batey and the hospital for matters pertaining to health of the individual and community. The promoters, being aware of every individual and birth in the batey, helped to identify potential participants in each batey visited. Participants were compensated based on culturally-appropriate norms.

Interviews were transcribed by the first author. The grounded theory approach was used to identify themes in the data. Beginning with the first few interviews, responses from the transcripts were organized into categories, and codes were then created to identify themes within each category. New codes were created as necessary, based on the responses gathered in the subsequent interviews. Identified themes were then placed into the context of a larger framework to address the goals of this study.

RESULTS

Mothers in our sample (N=65) ranged in age from 18 to 42, with an average of three children. We were able to enroll women from a total of 16 different bateyes in the area surrounding the city of La Romana, DR. As displayed in Table 1, the majority (70.8%; n=46) of mothers gave birth vaginally in a hospital (90.8%; n=59). A majority (89.2%; n=58) of the women said that they were not currently employed. Only a few (7.7%; n=5) women said they were legally married, however most (72.3%; n=47) women said they lived with the father of their children. Most (61.5%; n=40) women said they were currently using some form of birth control – injection being the most common form (26.2%; n=17), followed by tubal ligation (15.4%; n=10), oral contraceptive (15.4%; n=10), and finally implant (4.6%; n=3).

TABLE 1. Characteristics of batey women who had given birth within last two years; (n=65).

Characteristic	n (%)
Vaginal Delivery	46 (70.8)
Hospital Birth	59 (90.8)
Education (≤ 5 years)	27 (41.5)
Have an Occupation	7 (10.8)
Married	5 (7.7)
Live with Father of Children (not married)	47 (72.3)
Use Birth Control	40 (61.5)
Injection	17 (26.2)
Tubal Ligation	10 (15.4)
Oral Contraceptive	10 (15.4)
Implant	3 (4.6)

As displayed in Table 2, any breastfeeding, defined as a positive response to having ever breastfed for any duration of time, was found to be prevalent (86.1%; n=56). The six-month exclusive breastfeeding rate was low (9.2%; n=6), and rates of formula supplementation were high (69.2%; n=45). About half (53.8%; n=35) of the women had breastfed their child on the same day as that child's birth. A majority (73.8%; n=48) of mothers breastfed prior children of theirs if they had any.

TABLE 2. Breastfeeding practices of batey women who had given birth within last two years; (n=65).

Practice	n (%)
Any Breastfeeding	56 (86.2)
Exclusive Breastfeeding (0-6 months of life)	6 (9.2)
Formula Supplementation	45 (69.2)
Breastfed Child on Same Day as Birth	35 (53.8)
Breastfed Prior Children	48 (73.8)

In terms of deciding to breastfeed, we identified the theme of the nutritious value of breast milk as a central value underlying the decision. The majority of mothers (58.5%; n=38) indicated that breast milk "was the best way to feed the baby," "helps prevent the baby from getting sick," and that breast milk will make "the baby grow-up faster." The social influences to breastfeed were evident in quotes such as, "every woman gives breast milk because it's good for [babies]," "they say it's good for the baby," or "people told me to." Mothers were knowledgeable of the potential health benefits associated with breastfeeding sick children (e.g., diarrheal disease, lower respiratory infection), represented by increased frequency of breastfeeding for the duration of child's illness (75.4%; n=49). Mothers expressed that breast milk "is good for the baby when the baby is sick", or that breastfeeding

the sick child would help the baby heal faster, or that "when the baby is sick, the baby only wants the breast."

A subset of the mothers (30.8%; n=20) identified females in their social spheres, including their mothers, sisters, cousins, and/or friends, as a source of guidance and support in their feeding decisions. There were also mothers (41.5%; n=27) who identified "no one" as a person of guidance and support for these types of decisions. The remaining mothers (27.7%; n=18) who responded to this question identified male relatives (such as husbands or fathers), a physician, or spoke in more general terms of the "people in the batey" or "neighbors."

Regarding decisions not to breastfeed, we identified the theme of the perception of insufficient milk and/or insufficient composition of the milk. Mothers (27.7%; n=18) expressed that "breast milk is not enough for [the baby], "the baby is still hungry after [giving the] breast milk, I need to give something additional," "the baby did not want the breast," "the milk didn't come out," or "the milk was dirty." We also identified that the concept of formula was perceived as a marker of financial wellbeing by some women (26.2%; n=17), as expressed in quotes like, "I give food too, when I can't afford formula," or "when I can afford to, I buy formula."

When asked about what they enjoyed about breastfeeding, women would often smile and laugh when responding, with responses which reflected the mother-child bonding experience (24.6%; n=16) – "the baby looks into my eyes," "how the baby laughs," "the baby stops crying when I give the breast," "I love looking at the baby when I feed the baby." Additionally, a sense of maternal pride in being able to breastfeed their children was revealed in their responses (30.8%; n=20) – "I feel good because the baby is eating," "I know the baby is going to be well," "because it's my baby and I'm the mom," "I have so much milk to give the baby, and the baby gets full."

Regarding challenges encountered while breastfeeding, the majority (87.7%; n=57) responded "none." However, among the women who answered with a different response (n=8), we once again identified the theme of the perception of insufficient milk and/or insufficient composition of milk – "the milk didn't come out," "I need to eat a lot of food to make the breast milk good," "[the milk] didn't come on the first day," "the milk stopped for three days," "the milk didn't come the first day, because I didn't eat well." These challenges highlight the sentiment of the women related to inadequate nutrition and limited financial means.

Mothers were knowledgeable of the risks associated with breastfeeding while ill, with some women specifically indicating HIV/AIDS as an example of a maternal illness for which they would stop breastfeeding their infants (12.3%; n=8). Some women also expressed that they would seek the advice of a medical provider in the case of maternal/child illness in the setting of breastfeeding (12.3%; n=8). Many mothers expressed that they would stop breastfeeding if they were sick (69.2%; n=45) because, "I wouldn't want the baby to get sick," or because they knew that it may "not be good for the baby."

DISCUSSION

Exclusive breastfeeding for the six months of life is limited by perceptions of insufficient milk quality or production, in combination with the desire to provide adequate nutrition to infants in the resource-limited setting. The data from this study reflects the tightly interwoven socio-economic elements in the women's decision-making regarding breastfeeding in the bateyes. The women living in the bateyes grow up knowing that breast milk is the best for their babies, through the influence of their mothers, sisters, and other women in their social spheres. Living in the bateyes also means that they live in near-constant fear of not being able to provide sufficiently for their children.[2] When a mother in the

bateyes decides to supplement her breastfeeding with formula to feed her four-month-old infant, she is often doing so out of concern that she may not be producing breast milk that is enough (in quality or amount or both). Furthermore, as the data in this study reveals, many women expressed a desire to supplement with formula, but were limited by their financial means, which supports the idea that for some formula was a sign of financial wellbeing.

In terms of the effect of maternal or child illness on a mother's decision to breastfeed, the data reflects that mothers were aware of how certain maternal illness (such as HIV/AIDS) could be harmful to a breastfed child, and also that an ill child could reap benefits from being breastfed.[20-22] The source of their knowledge is unknown but reflects possibly some guidance from a medical provider, as many women did state they would seek a physician's advice in instances of maternal illness. However, it could also be from the stories passed down through the generations, as many of the women cited their mothers and sisters and other women in the communities as significant influencers of their decision for feeding their children.

Interestingly, the rate of exclusive breastfeeding found amongst the women of the bateyes included in this study (9.2%), follows more closely with the rate found in the DR (4.7% in 2014) than that found in Haiti (39.7% in 2012). The women living in the bateyes, who are of Haitian origin, some born in Haiti, others born in the DR, clearly share a mix of influences for breastfeeding their children. This may reflect a combination of factors including the labor and delivery practices at the local hospitals, access to formula in the hospitals and elsewhere, and influences from social interactions and/or media, [23-25].

The perception of insufficient breast milk production and/or reduced quality of breast milk is not unique to the women in the bateyes, and it is encountered in other impoverished areas.[19,26,27] Studies from Haiti have shown that this notion of insufficient breastmilk is present among the women, along with the idea of wanting to supplement breastmilk but being limited by the affordability of alternatives.[27,28] This sheds light on not only the similarities in thought among women living in poverty, but also the significance of cultural beliefs on feeding practices. It is not precisely known from our interview responses why some of the women referred to their breastmilk as "dirty," but other studies conducted in low-income countries have revealed that some women believe that colostrum is "dirty."[29]

One aspect that could be addressed to enhance breastfeeding practices is the implementation of more Baby-Friendly Hospitals in the DR.[30,31] As discussed in the introduction of this paper, the Baby-Friendly Hospital Initiative ensures practices beginning in the Labor and Delivery unit, which promote breastfeeding. These measures include early initiation of breastfeeding, close mother-infant contact (including skin-to-skin care), and the promotion of breastfeeding by hospital staff. Research into breastfeeding has shown promotion practices to be highly effective in a mother's decision to breastfeed.[32]

Future research possibilities could include, but are not limited to, investigating children's access to medical care, children's access to nutrition (in all forms), as well as breastfeeding initiatives and practices in the local hospitals in the DR. Furthermore, it could also be valuable to conduct comparative studies of women living outside of the bateyes – in both the DR and/or Haiti – with women living in the bateyes, with a focus on maternal and child health topics.

LIMITATIONS

The limitations of this study include: a convenient sample, generalizability limited to mothers >18 years in the La Romana area of the DR, and limited baseline information available.

This was a qualitative study conducted using a convenient sample. The batey communities are visited rather frequently by mission trips from the United States and thus have grown accustomed to American visitors to their communities.[4] We had access to the communities by way of our collaboration with the Good Samaritan Hospital in La Romana, which serves the people of the bateyes through charitable work. Additionally, since many of the women of the bateyes do not work outside the home, it was not difficult to find many study participants around the batey in the middle of the day.

The study excluded mothers who were less than 18 years of age, which limited the data to the extent that a portion of mothers approached for the study were under the age for inclusion to the study. The age limitation was set in accordance with IRB criteria for consenting adults. Future studies may choose to include those under 18 (requiring participant assent and guardian consent) in order to portray the full scope of mothers in the bateyes, especially as it pertains to child health in the setting of teen pregnancy.

Unfortunately, there is limited baseline information available on the people of the bateyes, as discussed earlier. As such, there are limitations for comparative analyses within this particular population. Additionally, there remains a great deal more to be studied and gathered on the people of the bateyes.

CONCLUSION

The benefits of breastfeeding are well-established and underlie the WHO recommendation of exclusive breastfeeding for the first six months of life, especially in the resource-limited setting.[12] The people of the bateyes receive minimal access to quality medical care. Although many women breastfeed their infants and know of the benefits of breastfeeding, some misconceptions as to the quality and quantity of breast milk do still exist. Specifically, while some mothers expressed concerns of insufficient quality of their breastmilk, others felt they couldn't produce sufficient amounts of breastmilk to feed their children adequately. Public health efforts geared towards goals such as culturally-sensitive and community-based promotion and support of breastfeeding through the existing health promoter network, expanding the Baby-Friendly Hospital Initiative, as well as training of healthcare providers, could help to promote exclusive breastfeeding.[29-31,33,34] Equally as important as encouraging breastfeeding in these communities, is supporting women who cannot safely breastfeed their children, through efforts to improve access to healthcare and providing affordable formula when necessary. In summary, education and outreach efforts focused on disseminating accurate information regarding breastfeeding and breastmilk could enhance adequate and affordable nutrition options for the infants of the bateyes.

ABBREVIATIONS

BFHI: Baby-Friendly Hospital Initiative; DR: Dominican Republic; EBF: exclusive breastfeeding.

AUTHOR'S CONTRIBUTIONS

Stephanie Batson contributed to conception or design, to acquisition, analysis or interpretation. She also drafted the manuscript and critically revised the manuscript and gave final approval. She agrees to be accountable for all aspects of work ensuring integrity and accuracy.

Chandler Ford contributed to conception or design, to acquisition, analysis or interpretation. She critically revised the manuscript and gave final approval. She agrees to be accountable for all aspects of work ensuring integrity and accuracy.

Elizabeth Brownell, MA, PhD, contributed to the conception or design, to acquisition, analysis or interpretation. She also critically revised the manuscript and gave approval. She also agrees to be accountable for all aspects of work ensuring integrity and accuracy.

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