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Factors affecting infant feeding choices with a focus on barriers to exclusive breastfeeding in Western Jamaica: a qualitative study

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Abstract

Background Despite the many benefits of exclusive breastfeeding to infants and mothers, only 33% of Jamaican infants are exclusively breastfed up to the recommend six months. This study was conducted to identify factors affecting mothers' feeding choices focusing on barriers to exclusive breastfeeding of infants six weeks to less than six months old.

Methods A qualitative study consisting of four focus group discussion sessions was conducted among 22 mothers attending postnatal clinics in western Jamaica from May to August 2016. The transcripts were coded by three independent coders and content analysis conducted to generate themes.

Results Four themes were identified namely, perceived advantages of breastfeeding centered mainly on the benefits of breastfeeding for the infant and mother, perceived barriers of breastfeeding highlighting physical pain and fatigue, supplementing culturally acceptable complementary foods and herbal remedies, and cultural norms including perception of how breastfeeding affects a woman's body, societal sources of breastfeeding information, satiation of infants, and family and other support. Mothers overwhelmingly agreed that breastfeeding was inexpensive, allowed them to bond with their infants and was good for the overall health and intellectual development of the infants. They identified painful nipples, engorged breasts, lack of sleep, physical exhaustion and pressure to return to work as barriers to breastfeeding. Mothers named a number of complementary foods, such as pumpkin, carrots, potato, banana, and chocho (Chayote), that were culturally accepted for feeding infants in Jamaica and discussed herbs that were considered to aid in infants' nutrition and overall health. Other cultural factors that were noted to influence exclusive breastfeeding were mothers feeling that breastfeeding would help their bodies, especially their bellies, go back to their pre-maternity figure, sources of breastfeeding information in the society including the internet, belief that breast milk alone does not satisfy babies, and family and other support.

Conclusion Mothers in this study identified unique challenges to exclusive breastfeeding that if addressed, would help to increase exclusive breastfeeding so that the World Health Organization's exclusive breastfeeding recommendations can be achieved.

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Keywords Exclusive breastfeeding, Jamaica, Benefits of breastfeeding, Barriers to breastfeeding, Recent mothers, Postnatal clinics

Background

Factors associated with exclusive breastfeeding have been examined by multiple studies conducted in Latin American and Caribbean (LAC). A study conducted in Peru reported that women who were married, self-identified as native, received breastfeeding training, resided in the highlands or jungle, or had their second or older child had a higher likelihood of breastfeeding [1]. Other studies conducted in several LAC countries showed that sociodemographic factors such as the mother's employment outside of the home, high income families, female wage and salaried workers, living in urban area, and high educational and economic level of mother were negatively associated with duration of exclusive breastfeeding [2–6]. Delivery via caesarian section was also found to be associated with cessation of exclusive breastfeeding [3].

In LAC countries, the exclusive breastfeeding rate for children under six months is 43%. compared to the global average of 48% [7]. A time series study of the 1990–2017 Demographic and Health Survey data from six LAC countries (Bolivia, Colombia, Dominican Republic, Guatemala, Peru, and Haiti) reported that the exclusive breastfeeding rate increased from 38.1% in the 1990s to 46.6% in the 2010s, with higher prevalence of exclusive breastfeeding in rural than in urban areas [5]. However, these rates of increase are insufficient to achieve the WHO exclusive breastfeeding target rate of at least 50% by 2025 (70% by 2030) for the first 6 months [8].

The rate of exclusive breastfeeding in Jamaica is low. Only 33% of Jamaican mothers were exclusively breastfeeding their babies 0–5 months old in 2022 [9]. The percent was higher for rural mothers (40%) compared to urban mothers (25%). This represents a 9.2% increase over the rate of 23.8% in 2011 [10]. Approximately 42% of children under the age of six months are being predominantly breastfed – these are children who are either exclusively breastfed or who, in addition to breastmilk, also receive plain water and other non-milk liquids [9].

A significant percentage of Jamaican mothers who use formula in place of exclusive breastfeeding, especially in rural areas, are from low-income families. In 2017 it was estimated that low-income Jamaican families spent around 14–65% of their annual incomes on infant formula depending on whether they breastfeed for the first three months or not at all for six months [11].

With the low levels of exclusive breastfeeding rates and small change over time, the JMOHW ramped up its breastfeeding campaign in 2022 emphasizing recommendations of the WHO and the United Nations Children's Fund (UNICEF) such as "initiating breastfeeding within one hour of birth, breastfeeding exclusively for the first six months, thereafter, providing nutritionally adequate and safe complementary foods, and continuing breastfeeding for up to two years of age or beyond" [12]. Additionally, the JMOHW is implementing a five-target policy and strategic plan that includes a draft policy for the international code of marketing breast milk substitutes to ensure the proper use of these substitutes when necessary, establishing "Baby Friendly Hospitals" and training clinic staff to ensure successful breastfeeding, training healthcare workers in monitoring child growth and development, training healthcare workers and caregivers in communication, developing posters on proper breastfeeding and childcare nutrition, and monitoring and evaluating children in child health clinics referring those with nutritional deficiencies for specialist nutrition care [12]. Although these interventions should promote optimal nutritional status, health, survival, and development of children, if specific barriers to breastfeeding experienced by mothers and their families are not assessed and addressed, exclusive breastfeeding targets will not be achieved. This qualitative study was conducted to hear firsthand from mothers of infants six-weeks to less than six-months old the specific barriers to breastfeeding that they experienced with a focus on barriers to exclusive breastfeeding, so that appropriate recommendations can be made to address these barriers and increase exclusive breastfeeding rates to move closer to achieving the WHO/UNICEF breastfeeding recommendations.

Methods

Study design and participant recruitment

A cross-sectional qualitative study was conducted from May to August 2016. Mothers of infants six-weeks to less than six-months old were recruited from postnatal clinics in the four parishes of Western Jamaica under the Western Regional Health Authority (WRHA). The women were told about the study by the clinic staff when they attended the clinic for their appointments and asked if they would be willing to participate in a focus group session. Those indicating willingness to participate were introduced to the research staff who asked them for possible days and times that they could attend a focus group session and for their phone numbers so that they could be contacted to schedule their return. Based on availability, focus group sessions were arranged for specific times at the clinics with six to eight women scheduled to attend a session.

At the focus group meeting, the women were asked to read the informed consent form and encouraged to ask questions. After questions were answered, women who agreed to participate were asked to sign the consent form. Each participant was assigned a number so that no names or identification information were included on the tape recordings. Four focus group sessions were conducted, three of the four with six women each and the other with four women. The focus group sessions were led by two trained research assistants, were recorded, and the recordings transcribed verbatim. During the sessions, the women were asked about breastfeeding practices, beliefs, attitudes, and barriers as outlined in the Focus Group Guide (Additional File 1). The Focus Group Guide was developed based on published literature and content expert review [11, 13–16].

Inclusion and exclusion criteria

Eligible participants were women ≥ 18 years of age attending postnatal clinics at health facilities under the WRHA and who were or were not exclusively breastfeeding their infants six-weeks to less than six-months old. Women who did not meet these criteria were excluded from the study.

Data analysis

The focus group transcripts were thoroughly reviewed by members of the study team (PJ, CH, MA). Three independent coders (CD, BR, SN) coded all transcripts using QSR International's NVivo 11.4.3 utilizing line-by-line coding of all responses to the focus group questions, followed by focused coding for directed codes [17]. Codes were compared at regularly scheduled meetings. There were no instances when consensus was not reached. SN also served as the peer-debriefer as she was methodologically and analytically adept, but not embedded in the research topic as much as the PI (PJ) and helped in elucidating the research endeavor and thereby contributing to the resonance of the research.

A content analysis approach including a constant comparative method was used to generate themes from the transcribed data [17]. The team (CD, BR, SN) discussed the coding process and contributed to the iterative data analysis. Inductive thematic saturation was reached, and trustworthiness was achieved through data triangulation (CD, BR, SN) [18, 19]. Discussions regarding methods on convening focus groups and interpretation of data within the context of Jamaican culture was carried out (See Additional File 1).

Table 1 Participant characteristics $N = 22$

Variables	Number	Percent
Marital status		
Single	10	45
Married	3	14
Common law	9	41
Education		
Primary	1	5
High School	13	59
Above high school	8	36
Income in Jamaican Dollars		
≤ 25,000	11	50
> 25,000	10	45
No answer	1	5
Number of children		
1–2	15	68
≥ 3	7	32
Reported Breastfeeding		
Yes	21	95
No	1	5
Type of Breastfeeding		
Exclusive	11	52
Non-exclusive	10	48

Results

Participant characteristics

Twenty-two mothers participated in the study. The majority (45%) were single or were in common-law relationships (41%; Table 1). Most of the women (59%) reported having high school education and 36% had education above high school. Half of the women earned ≤ JMD 25,000/month (minimum wage in Jamaica in 2016 was JMD 6,200 or USD 50 per week) and 45% earned above JMD 25,000. Slightly over two-thirds of the women had 1–2 children (68%) and the remainder had 3 or more children. Approximately 95% of mothers reported that they were breastfeeding, of whom 52% reported breastfeeding exclusively.

Themes

Four themes were identified from this study; namely, (1) perceived advantages of breastfeeding centered mainly on the benefits of breastfeeding for the infant and mother, (2) perceived barriers of breastfeeding highlighted the physical pain and fatigue, (3) supplementing culturally acceptable complementary foods and herbal remedies was prevalent, and (4) cultural norms including perception of how pregnancy affects a woman's body, societal sources of breastfeeding information, satiation of infants and family and other support, dictate various aspects of breastfeeding.

Theme 1: Perceived advantages of breastfeeding centered mainly on the benefits of breastfeeding for the infant and mother

Bonding

The most common advantage of breastfeeding given was that it allowed bonding between mothers and their infants.

> *"I think that breastfeeding allows the mother to bond with the baby and baby with the mother." -Participant, Focus Group One.*
> *"You get a better connection with the child emotionally." –Participant, Focus Group Three.*

Health and development of infant

Another perceived advantage of breastfeeding that was immensely popular among the mothers was that it was good for the overall health of the infant. Mothers believed that infants receive nutrients from breast milk and that breastfed infants have better health outcomes and are more intelligent.

> *"[Provides] protection from diseases and the baby grows healthier- [grows to be] a healthy baby because as you know the breast milk has in 'antibiotics and rich nutrients." -Participant, Focus Group Two.*
> *"Also, as they say it protects the child from allergy; like when you breastfeed, allergic reactions." -Participant, Focus Group Two.*
> *"They are more active and more intelligent." -Participant, Focus Group Three.*

Decreased cost

The third perceived advantage of breastfeeding by mothers was decreased cost from not having to buy formula. Mothers discussed how they did not have to obtain formula because they made the decision to breastfeed and that this was much more economical for them and their families.

> *"As you said it is one way of bonding with your child and it is cost effective- doesn't cost anything. You might have some sleepless nights, but it won't cost you anything." -Participant, Focus Group Two.*
> *"Yes, everything is in breast milk, so you don't have to worry about anything. Plus, it cost you less to feed the baby and the baby won't get sick every minute." -Participant, Focus Group Two.*
> *"The good thing about breastfeeding is that it is economical." -Participant, Focus Group Three.*

Theme 2: Perceived barriers to breastfeeding highlighted the physical pain and fatigue and need to return to work

Pain

Our study participants expressed that breast pain and lack of rest and sleep experienced from breastfeeding were barriers to breastfeeding. They explained that pain of their nipples from infants pulling on them or attempting to bite them and from engorged breasts made it harder for them to sustain breastfeeding.

> *"It [breast] hurts because it just feels like a rock. It's just stiff and won't move, the slightest thing that touches it makes it feels like it's on fire." -Participant, Focus Group Four.*
> *"Oh wow… so it's painful [because] they're biting whether they have teeth, or they don't have teeth." –Participant, Focus Group Four.*

Physical exhaustion

The mothers also expressed that breastfeeding was physically exhausting and stressful for them since their infants require frequent feeding and do not give them enough time to rest and sleep between feedings. Furthermore, mothers reported getting only short amounts of rest since their infants would cry or demand to be fed. This would only further perpetuate the stress and anxiety many mothers reported feeling. One participant stated that she would have sleepless nights due to the stresses of breastfeeding and being hypertensive. Participants acknowledged that they would attempt to sleep while their infants were asleep but reported often getting inadequate rest.

> *"Because I am not sleeping it would be said that it is stress. Yes, we are told to sleep while the baby is sleeping but sometimes you don't want to do that as yet." – Participant, Focus Group Two.*
> *"I don't sleep at nights, so it is best if I get a little rest…" – Participant, Focus Group Two.*
> *One participant stated that she needed to pretend to be asleep for her infant to fall asleep.*
> *"Her eyes open too, so sometimes I have to pretend to sleep beside her; I'll close my eyes like I'm sleeping." – Participant, Focus Group Three.*

Pressure to return to work

The mothers stated that there was an inordinate amount of pressure to return to work which meant they had to switch the infants from breastfeeding to formula feeding. They expressed that it takes time for breastfed infants to adjust to taking formula when breastfeeding mothers return to work. One participant pointed out that some

mothers express breast milk when they have to work (implying that the breast milk is used to feed the baby while they are at work), while some mothers may feed the baby breast milk or formula when they return home from work.

> *"There might just be one possibly like in her case where she has to go to work, and she is going to have to leave the baby. When you introduce the baby to breastfeeding, they will take more to the breastfeeding than the bottle-feeding; [since] you have started them on the breast [milk], it will take some time to break them into taking formula. You know that can be more of an inconvenience than before." -Participant, Focus Group One.*
> *"I have to go back to work so I have to leave my baby with the babysitter. I don't want to have any problems, so I have to buy the formula." -Participant, Focus Group Three.*
> *"So, if the parents [or] mother is working, and you know you have to... You have some parents nowadays who give [their babies] formula while some express [the milk from] the breast when they have to go to work. You know some may [even] give them formula or breast milk when they come home from work." -Participant, Focus Group One.*

Theme 3: Supplementing culturally acceptable complementary foods and herbal remedies was prevalent

Although there was a strong consensus among the mothers that breast milk is best, some mothers had introduced the baby to complementary foods considered culturally acceptable in Jamaica. They named foods such as, pumpkin, carrots, potato, banana and "chocho" (a greenish vegetable with a mild taste known as Chayote), gave examples of traditional mixtures that maternal figures had used in past generations and attested to the use of herbs being introduced to their infants to aid in their nutrition and overall health.

> *"You can even too mash Irish [potato], green bananas and pumpkin... Yeah, with butter and you can put a little gravy on it as well... Sardine too... Sardine? Yeah, that would go well with the banana... and chocho... Sardine and egg" -Participants, Focus Group Two.*
> *"I give him tea, bush tea" Participant, Focus Group Four*
> *"What do you mean its name is 'gripe bush'? Do you mean [the] rosemary [plant] with the yellow flowers? There is one that has 'gold' [in its name]...Yes Marigold."*
> *-Participant, Focus Group Four.*

Theme 4: Cultural norms including perception of how pregnancy affects a woman's body, societal sources of breastfeeding information, satiation of infants and family and other support dictate various aspects of breastfeeding

Our participants' decision to exclusively breastfeed was heavily influenced by the explicit or implicit opinions of others in the society and in their social network regarding the pros and cons of breastfeeding and the optimal duration of breastfeeding. Perception of how breastfeeding affects a woman's body, sources of breastfeeding information in the society, ability of breast milk to sufficiently satisfy the babies, and supporters/support groups were discussed.

Women's perceptions of how breastfeeding affect their bodies

The women felt that breastfeeding would positively impact their bodies in that it would help their pregnant bodies go back to their pre-pregnancy figure. They seemed to imply that the weight gain, mainly in the abdominal region, from pregnancy is a negative aspect of pregnancy.

> *"Because it [breastfeeding] brings your belly back [down]" – Participant, Focus Group 1.*
> *"Because it is healthier for the baby at the moment and also the mom benefits. As my friends said here you don't have to go to the gym because the baby (referring to breastfeeding) helps to bring back the body and to keep [your] figure/shape. So, it has its benefits" – Participant, Focus Group Two.*

Sources of breastfeeding information

Participants discussed the lack of awareness regarding breastfeeding among pregnant women and the fact that teaching about breastfeeding is restricted to local public health clinics managed by the JMOHW. They explained that most pregnant women would not know how to breastfeed until they arrived at the local public health clinic and are taught by a nurse. Regarding the sources of breastfeeding information in the society, the women stated that they learned from the public health clinics, support groups, their maternal figures, television, and the internet. Something compelling about these participants' statements on how they obtain breastfeeding information is that they often mentioned the use of the internet, particularly Google and YouTube.

> *"Most of the mothers that go to the private clinic or private doctor, the private doctor refers them to the [clinic] hospital. Sometimes they even find out that it is the same procedure at the clinic and the private doctor, so it is best to come to the public clinic. Some-*

times the nurses at the private clinic not educating them like how they do at the public clinic." Participant, Focus Group Two.

"Usually, it starts with the nurses you come in contact with first. Then you go to the hospital to deliver, you will have… you will see as you said in the hospital and health centers the little posters. So basically, it is in your face almost everywhere you turn. You will get opinions from grandparents and mothers who have experience. Though not all advises are good but you will get them." -Participant Focus Group Two.

"*Usually, the same persons as we have said before and now I realize that the media is coming in a lot of advertisement on the TV about breastfeeding and so." -Participant Focus Group Two.*

"*Anything that I'm not sure about [since] I have the internet at my fingertips, I'll just check on Google and it will tell all that you need to know." -Participant, Focus Group Two.*

Satiation of infants

A common and pervasive belief in the Jamaican society is that breast milk alone does not satisfy babies (does not fill their stomachs). Consequently, many mothers introduce their babies to complementary foods and formula early even while breastfeeding to ensure that the babies are satisfied.

"One night I got up and I was feeding him, he drank and drank. So, I put him down [to sleep] but even though his [diapers] were dry and I hushed him, he wouldn't fall asleep. To me this is because his belly is not full; so that is why I had to buy the formula." Participant, Focus Group Three.

"*Breast milk cannot full their bellies." -Participant, Focus Group Four.*

"*If when I give him [breast milk], he's still crying and crying, I'll then realize that the milk is not filling his belly so then I'll have to start giving him 'tin feed' [formula]." -Participant, Focus Group Four.*

Family and other support

Support from family members or other support groups was crucial to breastfeeding. The women often cited obtaining support from a maternal figure in their lives. Some spoke about how their mothers was there for the first few weeks of the baby's life, but others expressed the need for support.

"One of the things that came out in your question section was the fact about a supportive group. I think that if we had a supportive group… where people come together and discuss the benefits of breastfeeding apart from them coming to the health center or so. So, I think if we could raise the need for that, anybody, some charitable organization or some hotel or social group could develop something like that more people would be able to get the information. Just take a person [for instance] who has what we call postpartum depression, they are going through something, and they can't bother to breastfeed in the night, or they are ready to give up or whatever. A next person can say you know I had the feeling too but did this or I did that. So, the supportive group will make it easier and easier; you will see that we are more comfortable to breastfeed." –Participant, Focus Group Two.

"*Yes that [support group] would be good because you can learn from each other." –Participant, Focus Group Three.*

"Well, they [support group] will tell you about how to breastfeed, bond with the baby, the proper way [for the baby] to latch on and they tell you what to expect as a mother." -Participant, Focus Group One.

Discussion

This study shows that the mothers knew of the many benefits of breastfeeding on the overall health, emotional, and intellectual development of their infants, in helping their bodies to recover from the weight gain from pregnancy, in promoting their emotional health, and in bonding with their newborns. Previous breastfeeding studies conducted in Jamaica support our finding that majority of mothers had satisfactory knowledge of the benefits of breastfeeding and that 95–98% of mothers initiate breastfeeding their newborns [15, 16]. Therefore, the fact that only 33% of mothers practiced exclusive breastfeeding to six months is not due to lack of knowledge but to conditions beyond their control during the early postpartum period and beyond [15, 16]. A recent paper by Baker et al. discusses in depth societal, political and economic systems that undervalue women and inadequately protect the rights of mothers and children resulting in inadequate support and promotion of breastfeeding [20]. These authors strongly recommend reforms to overcome the many structural barriers. Many of the barriers to breastfeeding reported by our study participants such as lack of family and child support, physical exhaustion of mothers, pressure to return to work, inadequate breastfeeding education including lack of discussion on potential breastfeeding problems such as sore nipples and painful breasts that occur when mothers return home, are associated with societal, political, and economic structures in the society.

The UNICEF Baby Friendly Hospital Initiative (BFHI) was launched by the WHO in 1991 and adopted by the JMOHW in 1993. However, in a survey conducted by the WHO during August 2016-January 2017 (the time that this study was conducted), Jamaican health officials reported that only 2.3% of births in the country occurred in designated Baby Friendly Hospitals and Maternities [21]. In 2023, the JMOHW officials reported that ten institutions that provide maternity services have been certified as Baby Friendly (eight of which were being prepared for reassessment) and that four new hospitals were being targeted for assessment [22, 23]. Thus, the staff providing maternity services are trained using the JMOHW BFHI manual to inform all pregnant women about the benefits and management of breastfeeding, ensure skin to skin contact between mother and baby immediately after birth, and initiate breastfeeding within half hour of birth. The staff are also trained to show mothers how to breastfeed, how to maintain lactation even if they should be separated from their infants, and on other matters pertaining to exclusive breastfeeding and feeding infants on demand. Maternity clinic staff are also expected to discuss issues such as sore nipples, painful breasts, and breast care with each woman during antenatal visits and inform the women of how to get help so that they can be prepared to deal with these issues when they arise at home. Posters on breastfeeding and proper child nutrition are also displayed in maternity clinics. The JMOHW has also launched a breastfeeding video that discusses the benefits of breastfeeding and demonstrates how to feed and safely express breast milk [12]. This should be helpful since some of the women indicated that they are already using social media to educate themselves.

Although pregnant women receive training in the maternity clinics, the specific problems that they reported such as soreness of their nipples and breasts, insufficient sleep, fatigue, and stress occur at home after they are discharged from the hospitals with their babies. These are barriers that are more likely to be overcome if the WHO recommendations regarding providing pregnant women, new mothers, and caregivers, with supportive care including community support, support groups, and community-based health promotion and education activities including demonstrative activities are instituted [24]. Pregnant women need appropriate prenatal preparation but also need significant postnatal support to help them breastfeed successfully. The BFHI and the JMOHW also encourages maternity service providers to foster establishing breastfeeding support groups and referring mothers to these groups upon their discharge from the maternity facility. Support Groups for mothers exist in some parishes in Jamaica and WhatsApp groups have also been established in areas with internet connections, however, we cannot tell how widespread or prevalent support groups are in the western region without additional specific studies. There may also be a gap in education and support for women who do not attend clinics throughout the antenatal period or those who attend some private maternity facilities that do not provide all the intended information in an effective and demonstrable way. The women in our study were favorable of having support groups to discuss matters related to breastfeeding as well as personal matters such as postpartum depression.

The JMOHW has also encouraged the entire family to support the care of infants and children. Since mothers complained that the frequent required feeding of their infants did not allow them to get sufficient sleep and rest and left them fatigued, a more involved and guaranteed supportive post-delivery childcare plan that includes fathers, grandparents and other willing and available family members would be beneficial and may foster increase in exclusive breastfeeding. A systematic review of research conducted in a variety of low- and high-income countries on the effect of grandmothers on breastfeeding found that in some studies, grandmothers who had previously breastfed their infants or who were positively inclined towards breastfeeding had a significant positive impact on exclusive breastfeeding of their grandchildren [25]. Aspects of these studies that foster breastfeeding can be investigated among Jamaican grandmothers and other maternal figures.

A revolutionary change regarding breastfeeding over the years is that many mothers have been using electric breast pumps to express breast milk so that infants can be fed with mother's milk by the father, other family member, or caregiver, when the mother is at rest, at appointments, or otherwise separated from the infant such as when they return to work [26, 27]. Pumping milk allows for collection of larger volumes that can be stored frozen and used over time. This also provides opportunity for fathers to bond with the infants. A 2019 survey reported that 95% of breastfeeding mothers pump breast milk [28]. The mothers would continue to express milk when they return to work and are separated from the baby providing they have the appropriate facilities [29–31].

Mothers in our study reported that the need to return to work early interrupts their ability to exclusively breastfeed and bond with their infants. The Maternity Leave Act of Jamaica allows women 12 weeks (60 working days) of maternity leave of which eight weeks are paid, if the women have been working for the employer for a minimum of one year (52 weeks) [32]. Women may apply for no-pay leave or vacation leave to extend the period spent with their infants. However, many women may be dependent on the income and so need to return to work after eight weeks. The Breastfeeding Act "Right to Nursing Breaks or Daily Reduction of Hours of Work" states

that "An employer shall provide a reasonable break time for an employee to express breast milk for her nursing child for one year after the child's birth each time such employee has need to express the milk" [33]. However, pumping and storing facilities are not widely available at businesses, especially those that employ minimum wage earners, so businesses need to be encouraged to facilitate pumping and refrigeration of breast milk by mothers. Further, in Jamaica, the cost of breast pumps varies from JMD4,000 to JMD200,000 depending on the brand and if the pump is manual or electric and has any 'high-tech' functions [34]. Since electric pumps are more efficient, acquisition of a pump by a mother on minimum wage is a major investment. Mothers also need to plan to safely transport the milk to avoid contamination and transmission of infection to the infants.

In deciding to resume work without pumping and storing breast milk, mothers face the difficulty of having to purchase formula for the infant. If the infant is breastfed for the first three months and partially breastfed for months 4–6, the cost is estimated to be JMD10,532 [11]. For households earning minimum wage (JMD 6,200 per week in 2016), at least 14% of the monthly income would be spent to feed the infant alone. Thus, there is a relatively high level of spending on infant feeding when breast milk is not utilized. Mothers also discussed difficulty in getting infants to adjust to formula when they need to return to work after having started the infants on breast milk. This is a crucial finding of this study and one for which a solution should be given serious consideration by health officials.

The mothers in this study named a variety of complementary foods and teas that they feed their infants. One mother expressed that a complementary food such as porridge helped babies to be "big, thick and healthy." Thus, many infants may not be receiving the optimal nutrition to give them the healthiest start and promote good health and development later in life. An issue that some mothers brought up to justify feeding infants complementary food is that they felt that breast milk alone could not fill the babies' stomachs. Some mothers felt that their babies cried because they were still hungry after breastfeeding. Harrison et al. found that the mothers' belief that exclusive breastfeeding satisfied the infants was significantly associated with exclusive breastfeeding [16]. The belief that breast milk does not fully satisfy infants is pervasive in the Jamaican society [14] and needs to be addressed in the training given to maternity staff so that they can educate mothers and the larger society about the appropriate time for adding complementary foods to infants and the time that different types of complementary foods can be added. Baker et al. point out that common early infant adaptative/adjustment behaviors such as crying and irregular sleep durations are often misconceived by mothers and caretakers as signs of feeding problems resulting in addition of commercial milk formula to the infant's diet. Additional educational efforts are needed for health workers, families, and the public to eradicate these misconceptions and to uphold breastfeeding [20].

Body image was a cultural factor that was discussed in relation to exclusive breastfeeding. Some mothers were positive about breastfeeding because it helped women return to their pre-pregnancy figure faster after giving birth. Although we could find no published paper on body image as it relates to body size in Jamaica, we found a study conducted in St. Kitts that reported that participants were somewhat more likely to value heavier than thinner women [35]. In Jamaica, a fulsome body is favored similar to more traditional "non-western" societies including African cultures where there is acceptance of larger body size [36]. The women in our study seemed to be more concerned about losing the weight in their abdominal region more than overall body weight, but further studies need to be conducted to verify this.

Limitations

There are certain limitations that should be considered in interpreting the results of this study. First, the results may not be generalizable to the total population of postnatal mothers in Jamaica since it involved a convenience sample of women from western Jamaica. Although the sample size is small, we did achieve data saturation and the findings are comparable to national data reported in the MICS and in other studies conducted in northeastern and southeastern Jamaica. Since the data were self-reported, they are subject to social desirability bias and recall bias of participants. Additionally, since these data were collected in 2016, several changes started pre-COVID and ramped up post-COVID may lead to increased pace in exclusive breastfeeding rates in Jamaica. Despite these limitations, this study highlights difficult challenges to exclusive breastfeeding that if addressed would help to make it possible for mothers to exclusively breastfeed and for the early and long-term benefits of breastfeeding to be achieved.

Conclusion

The results of this study show that the mothers in western Jamaica are aware of the significant benefits of exclusive breastfeeding and overwhelmingly initiate breastfeeding but experience specific barriers to exclusive breastfeeding at home after delivery and discharge from health facilities. These barriers include the need for help with breast care and lactation, family and community support to help relieve the burden of lack of sleep and fatigue of mothers, and need to return to work which results in switching infants from breast to formula feeding. These

findings suggest that a means of expressing and storing breast milk at home so that infants can still be fed with the mother's milk while mothers are resting, pre-planning the time when mothers will return to work and whether infants will be fed breast milk exclusively, and conducting interventions to improve family and other support would facilitate exclusive breastfeeding. Hopefully, approaches can be developed to address the specific barriers to breastfeeding identified in this study to hasten achievement of the WHO/UNICEF recommendation of exclusively breastfeeding infants to 6 months of age.

Abbreviations

JMOHW	Jamaican Ministry of Health and Wellness
LAC	Latin America and the Caribbean
MICS	Multiple Indicator Cluster Survey
WHO	World Health Organization
WRHA	Western Regional Health Authority

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s13006-024-00671-8.

Additional File 1: Moderator's Guide For Focus Group Sessions

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Author contributions

P.J. and M.A. worked on the conceptualization and design, protocol and questionnaire development, review, supervision of data collection, and editing of the study and manuscript; C.H. worked on the data collection and data entry; S.N. provided supervision of data analysis and data interpretation for this study, C.D.M. and B.R. contributed to the data analysis, interpretation of results and writing original draft; P.J. and MA contributed to the data interpretation and revision of the manuscript.

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Data availability

The dataset used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethical approval

The protocol was reviewed and approved in May 2016 by the Institutional Review Board of the University of Alabama at Birmingham, United States of America, and the Western Regional Health Authority, Jamaica (IRB-160401009).

Consent for publication

Not Applicable.

Competing interests

The authors declare no competing interests.

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