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Exploring Infant Feeding Beliefs and Practices among Mothers in Major Urban Informal Settlements in Kenya

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Abstract

Appropriate infant feeding is a proxy indicator for good health and nutritional status of infants. The objective of this qualitative study was to explore mother's beliefs and practices of infant feeding practices up to two years of age or beyond in major urban informal settlements in Kenya. A total of nine focus groups were conducted in three randomly selected sites, namely: Kaptembwo in Nakuru, Manyatta 'A' in Kisumu, and Kibera in Nairobi. Sixty-four mothers of children aged 6-24 months were chosen purposively, and the results were thematically analyzed. Results showed that most mothers still breast-fed their children, but they intended to stop breast-feeding when the child is 18 months old. Generally, the mothers reported the benefits of breastfeeding for two years of age or beyond, such as protection against diseases, improving health and making the child strong. They perceived barriers to breastfeeding up to two years or beyond such as child illness, child's decision, return to work, baby addiction to breast milk, and inconvenience brought about by breastfeeding. The foods perceived by mothers as good for the baby included yoghurt, ground nuts, pumpkins, bananas, pawpaw, watermelon, oranges, spinach and traditional vegetables. While the foods perceived as not good for the baby were processed milk, eggs, and sweet foods such as sodas, biscuits, cakes. Participants had positive attitude towards water treatment and hand washing practices. The most commonly reported method of treating water was boiling. The perceived barriers to water treatment and hand washing practices included lack of fuel and water, forgetfulness, inadequate money, not able to control children. The findings indicate that increasing awareness on duration of breastfeeding may motivate more mothers to breastfeed for two years and beyond.

Keywords: *Beliefs; Breastfeeding; Hand washing; Infants; Mothers*

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Introduction

Breastfeeding and adequate complementary feeding is a proxy measure for the child's overall health and builds on benefits made through early and exclusive breastfeeding for mother and baby (Black *et al.,* 2013). The World Health Organization (WHO) recommends that infants should be breastfed exclusively for the first six months, then introduced to nutritious complementary foods alongside continuous breastfeeding up to two years of age or beyond. (WHO, 2010).

The Kenyan government's significant initiatives to promote breastfeeding in community include

implementation of the Baby Friendly Community Initiative (BFCI). The BFCI focuses on offering lactation support to address breastfeeding challenges, and integrating maternal nutrition and nutrition sensitive initiatives, such as community gardens; and water, sanitation, and hygiene (WASH) (Kavle *et al.,* 2019).

Although exclusive breastfeeding (EBF) rate has increased nationwide from 39 to 61% since 2009 to 2014 (M'Liria, 2020), the rates are among the lowest in informal settlements in Kenya (Kimani-Murage *et al., 2015*). A recent study in informal settlements in Kisumu reported that two out of 57 children were exclusively breastfed and complementary feeding started as early as at the age of 3 months (Mumma *et al.,* 2018). Another study by Macharia et al (2018) reported 41 percent of children attained minimum dietary diversity and only 27% attained a minimum acceptable adequate diet in informal settlements in Nairobi. While there are numerous studies that have examined breastfeeding status in Kenya, there is still limited information on mother's breastfeeding practices and beliefs up to two years of age and beyond.

Changeable variables linked to a mother's ability to breastfeed are known as psychosocial factors, yet there is limited study of these factors as noted by De Jager et al (2015). Despite the importance of proper infant feeding and the persistent lack of adherence to guidelines, research into modifiable factors that influence infant feeding practices in urban communities is minimal. There is therefore need to explore underlying psychosocial factors influencing breastfeeding up to two years of age or beyond. The most explored quantitative factors are socio- demographic variables such as child sex, mother's marital status, ethnicity, and level of education and place of delivery, which have not automatically resulted in significant improvement in the nutritional status of the children, especially in informal settlements.

Previous qualitative study done in Kenyan urban slums showed that suboptimal breastfeeding practices were as a result of cultural beliefs such fear of evil eye when breastfeeding, sagging breasts and colostrum being considered as dirty (Wanjohi *et al.,* 2016). Radzyminski & Callister, (2016) qualitative study identified bonding with infant, maternal weight loss, infant health, breastfeeding was cheaper and convenient as perceived benefits of breastfeeding.

A study conducted in Kisumu, showed that child care is usually the responsibility of parents though they may be assisted by the extended family living in the same household or in the community or even neighbours (Mumma *et al., 2018*). Because cultures differs from one place to another, there is need to explore infant feeding practices in different geographical locations in Kenya so as to gain in-depth understanding of infant feeding beliefs and practices. The aim of this qualitative study was to explore mother's beliefs and infant feeding practices up to two years of age or beyond including barriers to continued breastfeeding. The findings from this study can be used to develop and implement nutrition programs and consequently improve children's health and nutritional status.

Materials and Methods

Study Design

This exploratory qualitative study was conducted using focus group discussions in three purposively selected towns namely Kisumu, Nairobi and Nakuru, Kenya. The towns were chosen because they are not only diverse geographically and economically but are heavily populated. This study targeted Kisumu and Nairobi because the majority of the slums are found in the two regions. Kisumu has the highest proportion of informal settlement population (47%) with a GDP of 2.9%; followed by Nairobi, with 36.2% proportion of informal settlement population and a GDP of (21.7%). Nakuru has about a 2% proportion of the informal settlement population with a GDP of 6.1%. Nairobi, which has nearly 200 slums, is an economically important city with diverse organizations and companies.

Three informal settlements were randomly selected from each town namely: Kibera in Nairobi; Manyatta `A' in Kisumu; and Kaptembwo in Nakuru, Kenya. This study was done in informal settlements because many urbanites reside in the areas, which are characterized by congestion, social and economic exclusion, worsening environmental factors,

deprivation, and lack of basic social care (Mutua *et al.,* 2011). The settlements are also characterized by a high prevalence (about 40%) of undernutrition and low rates optimal breastfeeding (Kimani-Murage *et al.,* 2015).

Study Participants

Participants were mothers who were at least 18 years of age and had children aged 6-24 months. Those who had resided in the area for at least one year and more, and had given informed consent were considered eligible to participate in the study. Mothers who did not give consent, and did not have children aged 6-24 months were excluded from the study. The study focused on infants aged 6-24 months to obtain in-depth understanding of breastfeeding practices and minimize recall bias. Children aged 6-24 months are considered more susceptible to malnutrition when breast milk alone is no longer adequate to sustain all their nutritional needs and additional feeding should be introduced (Swathi *et al.,* 2017).

Sampling Procedure

A total of 64 mothers in nine focus groups (three focus groups in each informal settlement) participated in the study. Recruitment and collection of data continued until data saturation was reached. Each focus group had at least 5 to 10 mothers of children aged 6 to 24 months. Purposive sampling was used to select mothers who had children aged between 6 to 24 months. Community health volunteers went door to door describing the survey objectives to eligible participants and inviting them to take part in the research.

Data Collection Procedures

The Focus Group Discussion (FGD) Guide was used to gather evidence for an in-depth understanding of beliefs regarding breastfeeding up to two years and beyond. Experts in the field of behavioural nutrition, psychology and a statistician gave input regarding the simplicity, clarity, and relevance of the questions in the FGD guide. The guide was translated into Swahili by competent translators. To ensure accuracy, another translator did back translations from Swahili to English. Prior to the main survey, the guide was pre tested on one focus group. The guide consisted of questions on, breastfeeding such as experiences, barriers, beliefs and practices related to breastfeeding. Treatment of drinking water and hand washing practices during complementary feeding was also assessed. Three nutritionists, who were trained in interviewing methods and the administration of questionnaires, facilitated FGDs. The sessions begun with introduction of the facilitator, note takers and participants. Focus group discussions were conducted at a designated time and secured location such as schools or church to ensure maximum privacy.

The Moderator who explained the topics for discussion and study objectives guided the discussions. Probes were used to obtain detailed and personal data from the participants.

Each session lasted 1 to 2 hours. Digital voice recorder was used to record the discussions during FGDs and for later use in data analysis. The note taker expanded the handwritten notes into narratives that were entered into the principal investigator's password-protected computer for transcription. Transcription was done immediately after each FGD.

Ethical Considerations

This study obtained research approval from the Ethics Review Committee of Masinde Muliro University, the National Council for Science and Technology (NACOSTI),), the County Director's and representatives of the Ministry of Health (MOH) and Ministry of Education (MOE). Permission was sought from the mothers to participate voluntarily in the study. The purpose of the study was explained and participants were assured of anonymity and confidentiality of data. Thereafter, informed consent was obtained from each participant.

Data Analysis

As proposed by Braun & Clark (2006), five steps had been followed to conduct thematic qualitative data analysis. The first step was data familiarization, which included the transcription of digital data and translation into English by two researchers. In step two, the researchers identified initial codes independently and compared their findings. The transcripts were coded based on the responses of the participants to each question and the key themes. Then the themes were checked in relation to the codes and

for overall data set. The last step involved defining and naming themes and producing the narrative report. To ensure credibility, the researchers discussed the results, which were then shared with the study participants to get their views on whether the results reflected their views and experiences.

Results

Socio-Demographic Characteristics of Mothers

Sixty-four (64) mothers of children aged 6-24 months participated in the focus groups. Thirty-two (32) (50%) participants were aged 19-25 years. The majority (56 (87%) were married. All the mothers had attended school to some extent; fifteen (15) (23.4%) had completed secondary education while almost half (28) 43.7%) did not go beyond primary education. The socio-demographic characteristics of the mothers are shown in Table 1.

Table 1. Socio-demographic characteristics of the mothers

Variables	Total		Kibera		Manyatta `A'		Kaptembwo	
	n	%	n	%	n	%	n	%
Mother's age								
18	1	1.5	1	4.2	0	0	0	0
19-25	32	50	13	54.2	10	40	9	60
26-32	17	26.6	5	20.8	9	36	3	20
33-38	9	14.1	2	8.3	4	16	3	20
> 39	5	7.8	3	12.3	2	8	0	0
Marital status								
Married	56	87.5	20	83.3	23	92	13	86.7
Single	8	12.5	4	16.7	2	8	2	13.3
Highest education level								
Incomplete primary	6	10.94	2	8.3	3	12	1	6.7
Complete primary	21	32.81	7	29.2	8	3.2	6	40
Incomplete secondary	13	20.31	5	29.8	6	24	2	13.3
Complete secondary	13	23.44	4	16.7	6	24	3	20
College	11	12.5	6	25	2	8	3	20

Beliefs and Practices Related to Breastfeeding up to Two Years of Age or Beyond

In all areas (Manyatta `A', Kaptembwo and Kibera), mothers reported that they were still breastfeeding. Most mothers reported the benefits of breastfeeding a baby for a longer duration. Participants' responses regarding duration and intention to breastfeed for longer duration varied from three months to two and half years. Most mothers reported that they were still breastfeeding at the time of study but did not intend to breastfeed beyond one and a half years old. However, some mothers reported that they would breastfeed until the infant stops by itself. The participants gave mixed responses when asked whether they had any intention to breastfeed up to two years and beyond. Most expressed a desire to breastfeed for up to two years. One mother said, ``*with me, I intend to reach two years because you know breast milk is the best food for the baby*".

Only a few participants were willing to breastfeed beyond two years. As one participant said:
``*My firstborn will breastfeed up to two and a half, until neighbours will wonder why I am breastfeeding like ancient woman.''* (Mother from Kibera)".
Some participants stated they would breastfed up to one and a half years. One mother said, *"Breastfeeding for two years and beyond would make the baby refuse to eat when you give him food because he knows that he will be given breast milk. I would stop breastfeeding him before two years so that he eats.''* (Mother from Kaptembwo)".

Perceived Benefits of Breastfeeding

Baby becomes healthy. Mothers reported perceived benefits related to improving health

and protecting the baby against diseases and infections such as common cold and diarrhoea.

``*The good thing of breastfeeding for six months, is that it protects against diseases and that baby will have good health.''*(Mother from Manyatta `A')

`` *When a child breastfeeds for long it prevents diseases, the baby does not become sick, he cannot be weak like the one who stopped breastfeeding early''*(Mother from Kibera)

Breast milk makes baby strong. Mothers reported that breastfeeding for two years would make the baby strong.

'`With me, this is not the first born, my firstborn breastfed up to two years of age. The second born did not breastfeed up to two years because I got pregnant. I usually see the first one is strong because he breastfed for two years. But the second born is not strong like the firstborn because he did not breastfeed up to two years. I believe that breastmilk helps the child be strong''(Mother from Manyatta `A')

The mother becomes happy. Some mothers pointed out that breastfeeding for two years or beyond would make the mother happy especially when she sees the baby is strong.

``*I think when a baby breastfeed up to two years he will be strong and the parent will be happy when he sees the baby strong''*(Mother from Kibera)

Perceptions Regarding Acceptable and Unsuitable Foods for Babies

The participants were probed to name foods the community perceived as ``good'' or ``bad'. This question was asked to get an idea of what the mothers thought was suitable food for the babies and gauge whether the mothers have food taboos. Notably, the mothers named the "good" foods more easily compared to "bad" foods. Enriched porridge and potatoes were commonly termed as good food citing ease of digestion. Green leafy vegetables more specifically, spinach was preferred for its importance in 'adding blood'. One participant said:

``*If you go to the clinic, the doctors tell us to give the baby too many vegetables especially spinach. They tell us to give the baby spinach and porridge every day.''* (Mother from Manyatta `A').

Other fruits and vegetables mentioned as healthy foods for the baby were pumpkins, bananas, pawpaw, watermelon, oranges, and traditional vegetables such as *terere*. These foods were presumed to assist digestion. Mothers believed fish especially small fish commonly known as *omena* was good since it provides calcium for strong bones. Another participant said yogurt is good since it adds water in the body. A few participants mentioned groundnuts and soya beans.

Unsuitable Complementary Foods for the Baby

Discussions with the mothers revealed varied reactions to foods considered as taboos. Several mothers stated that eggs would make a child stammer or take too long to talk.

``*I have heard eggs is bad for a child. In this community people say if you give your child eggs, he will not talk quickly. He will delay.''*(Mother from Kibera).

``*So like egg, I hear people say that babies are not supposed to eat eggs every day'' {they will be dumb''*(Mother, from Manyatta `A').

However, a few others did not consider eggs as bad for children.

``*So my baby likes eggs and she is young, am told I should not give every day, I don't understand''* (Mother from Kaptembwo).

``*On my side, I usually give my child eggs but he learnt how to talk early {laugh} he keeps eating them but talking he talks very well''* (Mother from Manyatta).

Most of the mothers mentioned that milk bought in packets was the best. Fresh packet milk was more ideal that the long life packet milk. Long-life milk and ATM milk sold along the streets were considered to have chemicals.

"They say if you want to give baby milk it is a must you buy one of the packets from the shops''

"if it is packet milk, they say not the thick ones" (Mother from Kaptembwo).

"Even the milk of nowadays is not good also...at times flour is mixed inside especially long life, is not good for the baby, because it has flour inside'' (Mother from Kibera).

Sweet foods such as tea, cakes and biscuits were believed to make a baby loose appetite.

"Other foods that I think are not good for children are sweet foods like tea, cakes, and biscuits. They make the child to lose appetite. Children who are given tea do not eat too much'' (Mother from Kaptembwo).

Sodas were considered not good because of chemical additives.
*"There are those who say it has chemicals like sodas and juice. There are those who buy and give their children'' (*Mother from Manyatta `A'*).*

*"Like me, I would not accept all foods like soda I cannot make my child get used to soda so much because if it is an orange soda I would rather give oranges. Fruits are good'' (*Mother from Kaptembwo*).*
Some mothers stated that plain rice, potatoes, and chips (French fries) were of no help to the baby. Leftover *ugali* was alleged to cause tapeworms and hence not ideal. Others indicated being warned in the clinic that *weetabix* was not good for babies. Also, the participants voiced that ready-made cooked foods bought along the streets such as *mandazis*, and French fries were not good. Such foods were likely to cause stomach ache as they were not clean and had a lot of fat.

Facilitators of Breastfeeding
Health recommendations**:** In all FGDs, mothers admitted hearing that babies should exclusively breastfeed for the first six months of age and continuously breastfeed up to two years. When asked about their thoughts regarding the recommendation to exclusive breastfeeding for the first six months, the participants gave mixed responses. Some mothers thought it was good advice while others mentioned it was bad advice. Although most participants said it was a good recommendation, they did not meet the recommendation probably because of challenges they experienced. One participant said, "*I don't agree...because even if they eat they don't become sick''*. Some participants claimed not to agree with the recommendation because of the problem of insufficient milk, torturing baby, hungry child, and return to work. For example, one mother said:
``It is a good health recommendation, but children are not the same, a child can be breastfed for six months. But there are some children who are only two weeks or one month but are very hungry, are not getting satisfied with breastmilk. On my side, I think we should start giving food when they are three months'' (Mother from Kibera)
Some of the participants felt good about the recommendation, as they had first-hand experience. One participant said,

*``It is good recommendation, because I compared with another child who had started eating food early and the one that I followed the advice. This one that breastfed up to six months was just ok and the one that I gave food before six months had the problem of diarrhoea'' (*Mother from Manyatta `A'*)*
Some mothers were uncertain about the recommendation citing ignorance, as one participant said, *``now we can't know that because it is the nurse who knows.*

Perceived Barriers to Breastfeeding for Two Years or Beyond
Child's age and return to work. Another belief for not breastfeeding up to two years was that the baby was too old. Most of the participants believed that breastfeeding should be discontinued when the baby reaches one and half years old. Return to work was also mentioned as a main reason for not breastfeeding up to two years and beyond.
*`` I will stop him when he will be one and a half years old because. He will be too big to breastfeed and can eat any food. I would want him to get used to life without me. I will also get him to stop because I need to return to work. I would not let him breastfeed for two years.''(*Mother from Kibera*)*
However, some mothers intended to breastfeed their babies up two years and beyond because they perceived the child to be still young at that age.
``Mine will breastfeed up to two and a half because he will still be young on my side and I will not be having anywhere to go'' (Mother from Kaptembwo)

Addiction to breastfeeding. Mothers expressed concerns that if a baby breastfeeds for a period longer than two years, the baby is likely to get addicted to breast milk hence refuse to feed properly.
*``That one will make him even when you give him food, he doesn't eat because he knows that he will be given breast milk…I will stop breastfeeding so that he eats well'' (*Mother from Kaptembwo*)*
*``There are some who breastfeeds until when you give them food they do not want. They only want breastmilk (*Mother from Kibera*)*

Breastfeeding is too tiring. A few mothers articulated that breastfeeding is exhausting and results into dizziness; therefore one is likely to

stop breastfeeding early. For instance, one mother said:
``*He breastfeeds so much, he makes me tired and dizzy. I am planning to stop him when he reaches one and a half. By that time, he shall have grown big''* (Mother from Kaptembwo)
However, mothers pointed out that some mothers are just lazy and would give so many excuses not to breastfeed.
``*You know problem comes at night; some women have a lot of sleep {laugh} such that when a baby wakes up at night her work is to move the baby close, the baby knows where to breastfeed. The mother would then say that breastfeeding is tiring''*

Child's decision. Cues displayed by the babies led some mothers to continue breastfeeding because the child was not ready to stop.
``*The baby does not want to stop breastfeeding. Since I am always in the house and I still have plenty of milk, I have decided she just continues breastfeeding* (Mother from Kaptembwo)''.

``*There are some children who breastfeeduntil when you give them food they don't want. It is only breastmilk that they want. So you just let them continue breastfeed for as long as they want''* (Mother from Kibera).

Child sickness. Some mothers also stated prolonged sickness of a child would result in stoppage of breastfeeding. One mother said:
``*There are some children who become sick and then they stop breastfeeding by themselves. While there are some who breastfeed too much, so you stop him because he refuses to eat food''* (Mother from Manyatta `A')

Inconvenience. Participants also cited inconvenience brought about breastfeeding. Mothers felt restricted by breastfeeding from doing their work. They reported that breastmilk was too little and cumbersome to express for the baby. One participant said:
`` *It makes the mother to be always with the baby everywhere. You cannot also do your work outside home and you have too little breastmilk that makes it hard to express. He stops you from working or going to search for work outside''* (Mother from Manyatta `A').

Water treatment, Hand washing perceptions and Practices during Infant feeding

When asked whether they treat their drinking water, the respondents gave mixed responses. Only a few mothers claimed to be treating drinking water for the baby.
One mother cited, ``*with me, I don't treat water, I have never treated water.''*
Mothers who treated water did so only at times. Boiling was the most common method of treating drinking water for the baby.
*"If I boil water in the morning, I put it in a clean jerrican and keep it well. So if the baby is thirsty, I give her the boiled water". (*Mother from Kaptembwo)

"Even me, I do boil my water and put it inside a jerrican that has been washed. Once I have boiled the water, I let it cool well, and then I will filter it with a sieve. And then I put it in the jerrican and set it aside for drinking. If it gets finished I will boil another one'' (Mother from Manyatta `A')
Most mothers cited the benefits of treating water such as prevents diseases and kills germs.
``*Boiling water is good because when you boil water the germs go down and then you pour in a clean cloth and then the germs remain on the cloth'' (*Mother from Manyatta `A'*).*

Some participants treated their water using a chlorine- based component called *water guard* arguing that the mixture was easy to apply since boiling water took longer time. The component was also believed to kill germs and prevent diseases.
"*Because water guard is easy to use. Boiling takes a longer time''. (*Mother from Manyatta `A')

`` *I use water guard because it kills germs that are usually in water. If you put water guard it makes the mud to go down and then you take the clean water and filter using a clean cloth'' (*Mother from Kaptembwo*).*
In almost all FGDs, mothers did not report any bad thing associated with treating of drinking water. However, mixed responses regarding *water guard* emerged. Some participants suggested the mixture was good in killing germs while others opposed its use. The reasons given for not using *water guard* to treat water were: it is a chemical; children would use it to wash their clothes; it can bleach the stomach; it smells bad, and; it is expensive.

``*There is nothing bad using water guard. It is only that I don't like using water guard because of its smell of the water that is treated using water guard. I don't know whether it is chemical in the water guard''* (Mother from Kibera).

Hand washing Practices

Most of the respondents reported not washing hands in running water. And neither used soap.

``*Here in Kibera, we do not have tap water in our houses. I put water in a container such as a tin or a jug and pour the water in a basin and wash my hands using the water with soap. And then I rinse my hands using the water that has remained in the jug. We do not have taps''* (Mother from Kibera*).*

``*We put in a basin and wash our hands. You know if we were in a self-contained house that has a tap with running water it would be easier. I do clean my hands using water and soap in a basin* (Mother from Kaptembwo*).*

Only a few reported using running water to wash hands.

``*With me, I usually wash my hands; I do not put water in the basin. Somebody pours for me the water as I wash my hands so that dirt is removed''* (Mother from Kibera*).*

The intention to wash hands with soap hence forth was explored. Most of the mothers expressed an intention to wash hands with soap henceforth. Others seemed not sure and claimed a reminder to use soap was necessary. All the mothers were highly confident that washing hands would protect the babies against disease and kill germs.

A few of the participants claimed to have been informed at the FGDs the importance of washing hands with soap. The majority who were already practicing the hygienic way of hand washing alluded to continue with the practice. The welfare of the children was of paramount importance to the mothers. The most common reason given was to prevent diseases.

Barriers

Lack of money for fuel and water guard. The most common reason for not treating drinking water was the lack of money for buying fuel.

`` *May be you don't have kerosene or charcoal to enable you boils water. You know if you have water guard you will use it for some time because people are drinking water.''* (Mother from Kibera).

Lack of time. ``*Sometimes we do not have time to boil water; you just fetch untreated water and give the child direct. It is good the baby get used to taking untreated water. You know if the baby is used to taking boiled water, one day when you miss and give untreated water, the disease is likely to affect her''*(Mother from Manyatta `A'*).*

A vast number alluded to the fact that tap water was clean and thus not likely to cause diarrhoea. However a few had some level of mistrust in the cleanliness of tap water.

``*Not my water, it is clean...there are times you can fetch that water and it has the smell of that medicine, let's say it has gotten lost for a short time, when it comes back it comes with the smell of medicine''* (Mother from Kibera).

Another participant said,

``*If you put it in a cup you see it is clean, if you leave it to stay in a container, in the morning if you look at it in the container, dirt is in the bottom. We just say it is dirty but let me just drink it, you say you can't boil water let us just drink it God will heal us.''* (Mother from Kaptembwo)

Not able to control children. Mothers unanimously reasoned that controlling the kind of water children drank was hard.

`*You can leave your child somewhere and she is given water that is not boiled''*

``*I use water guard because I found if I boil, sometimes children forget and drink the one that is not boiled. They just take any water. It forced me to use water guard for all the water that is in the house so that even if they take any water they find it is just ok.* (Mother from Kibera*).*

Forgetfulness. ``B*ecause I am not perfect, at times I forget to boil water. Sometimes I boil, when it has cooled I put it in a container, then I can start using it tomorrow because it will find when it has cooled''* (Mother from Kaptembwo*).*

``*You will diarrhoea because if you have forgotten to treat water it is a must you will diarrhoea''* (Mother from Manyatta `A'*).*

***Unavailability of treated water*:** Sometimes treated was not available in the house forcing the mother to give the baby untreated water.

``*At times maybe you have boiled the water and put it in a container and then it is finished and the baby needs water so it forces you to get what is near and give it to her''(*Mother from Kibera*).*

``*There is a container that I have set aside I have poured in drinking water I put in water guard. Sometimes if I have not bought water guard, I drink the untreated water. (*Mother from Manyatta `A'*).*

The lack of soap and water, as well as forgetfulness, a lack of time, carelessness, neglect, and laziness, were identified as the most likely barriers to regular hand washing with soap.

One mother mentioned,

``*It is not that the soap is not there….soap is there and maybe at times they have even the liquid one, but there is no time...it is not a wonder if you are from the toilet and you forget you touch food and give the baby without washing hands with soap.''(*Mother from Kibera*).*

`` *Looking for soap is the problem if at all it was there like in a hotel or beside the road you know it is easy to use, but us we don't have time''.*(Mother from Kaptembwo)

Others cited ignorance and lack of money to buy soap as the probable reason.

``*Some people maybe they don't have water in the house, doesn't have 5 shillings for buying 20 liters she cannot be clean hands. While some mothers are just used to dirtiness even if they have water.'' (*Mother from Manyatta A*)*

A few participants claimed when indoors the hands are assumed to be clean.

``*If I am just indoors, I have not gone outside, I believe I am not dirty because I have not greeted anybody it makes me not to wash hands as often.'' (*Mother from Kaptembwo*).*

Some washed hands with soap as an inbuilt practice.

One mother said,

``*It is something I am used to washing hands with soap, and I teach people how to wash hands and importance of washing hands with soap...so me it is something I am used to. I was taught in the clinics'' (*Mother from Kibera*).*

Responses were sought on who was likely to influence the participants in the washing of hands. Most of the participants mentioned doctors followed by family members including children and husband. Other participants mentioned were neighbours and parents. An overwhelming number of participants expressed none would disapprove hand washing.

Discussion

In this study, mothers pointed out benefits of breastfeeding such as baby becomes healthy and protects against diseases consistent with other studies (Mgongo *et al.,* 2018; Victora *et al.,* 2016). This indicates a positive attitude towards breastfeeding in line with WHO recommendations. Awareness of these advantages should be used to create instructional messaging that encourages the practice of breastfeeding in this context. Similarly, Wennberg et al (2017) study identified emerging themes related to benefits of breastfeeding such as being natural; breastmilk protects against diseases; and baby becomes healthy. Despite positive attitudes towards breastfeeding, some mothers in this sample prevented the baby from breastfeeding beyond one and a half years. This suggests that the infants were not exposed to the benefits of breastfeeding for a longer duration. In addition, several mothers indicated that they had planned to stop the baby from breastfeeding at one and half years of age. The finding is contrary to a study by Nakachew *et al*., (2018) in Ethiopia, which found that participants continued breastfeeding until two years and beyond. A qualitative study done in Lao found that 14 out of 16 had either stopped breastfeeding or planned to discontinue breastfeeding when the reaches 20 months (Lee *et al.,* 2013).

The results of this study showed that the community perceived street foods as food not healthy for baby this is comparable to a finding by Goudet *et al*., (2017) in which participants mentioned that street foods are unhygienic and can cause illness. Goudet *et al.,* (2017) noted that the street foods consumed by infants are often inadequate due to poor nutrient intake and safety. A noteworthy finding in this study is that there were no strong cultural beliefs and taboos influencing mother's infant feeding practices. Probably the strong beliefs and taboos existed in the past. The discussion topic of children's "bad foods" was often left unanswered. However, this study found a common belief that infants are not supposed to eat eggs as it will make them to

stammer, not talking well or would delay in speech. This belief compromise appropriate complementary feeding as children missed on the nutrients provided by eggs. This is contrary to a study by Rasheed et al (2016), in which mothers considered eggs suitable for infants aged 6-23 months.

In the present study some of the reasons for discontinuation of breastfeeding before two years of age were baby will refuse to eat and child illness. This is consistent with a previous study that found that mothers did not meet the desired duration of breastfeeding because of lactation challenges, infant nutrition and illness (Sara *et al.,* 2008; Odom *et al.,* 2013). In addition, this study reported that mothers would stop breastfeeding because it makes them tired and inconvenience them. This is consistent with a study in Tanzania that showed that mothers considered breastfeeding as tiring and led to lose of weight (Mgongo *et al.,* 2018). A similar study done in Canada showed that mothers cited inconvenience or fatigue as a reason for discontinuing breastfeeding (Brown *et al.,* 2014).

Moreover, this qualitative study showed stress as one of the causes of insufficient breast milk. This is consistent with a study by Lesorogol *et al.,* (2017) in Haiti who identified daily stress of finding money, food, and other necessities made breastfeeding harder. In this study, mothers continued breastfeeding because the children were not ready to stop. Similarly, other studies (Thompson *et al.,* 2019) reported duration of breastfeeding was influenced by child's cue or decision.

The focus group discussion results from this study also revealed that return to work was a barrier to continued breastfeeding consistent with a study by Brown et al 2014). A study by Kimani-Murage *et al., (*2015) in informal settlements in Kenya found that mothers working in manual positions faced difficulties combining breastfeeding and work. Optimum breastfeeding habits have been diminished by extra burden and lack of support (Kimani-Murage *et al.,* 2015).

The qualitative findings of this study showed that some mothers do not wash their hands with soap on a regular basis, suggesting the need to improve measures aimed at improving hand washing habits. The findings are contrary to a study done in Kisumu by Mumma et al (2018), where all caregivers reported hand washing before feeding the baby. According to the findings of this research, mothers mentioned that hand washing prevents diseases, which is in line with a study by Asekum *et al.,* (2014). The results indicate that mothers have positive attitudes towards hygienic practices.

The lack of soap and water during infant feeding was stated as an obstacle by some participants in this study. According to a study conducted in Bangladesh, having access to water and soap at a hand washing area increased the probability of washing hands with soap. (Luby *et al.,* 2009). The current findings are in line with those of Demssie (2017), who found that a lack of time, resources, and simple inconvenience were, among the reasons Ethiopian mothers did not improve their hygienic practices. Similarly, lack of water and soap, as well as time constraints, were identified as barriers to hand washing among Ugandan mothers (Topher, 2019). In the current research, carelessness, neglect, and laziness were identified as the most likely barriers to regular hand washing with soap. Topher (2019) pointed out that some individuals in some cultures are just too lazy to wash their hands.

According to the findings of this study, the majority of participants did not treat their drinking water. The majority of those who treated their drinking water did so by boiling it. The reason for not treating water may be because the participants perceived their water to be clean. A study conducted in Nigeria's Kaduna state found a higher rate of household water treatment because the majority of the respondents lacked access to an improved source of water. (Ibrahim *et al.,* 2017). This may have prompted them to treat their water in order to protect their children from water-borne illnesses. This indicates a need to create awareness on importance of household treatment of drinking water especially for infants.

The findings of this study are consistent with another study in Nigeria, which showed that most participants used boiling method while only a few used chlorine-based treatment (Miner *et al.,* 2015). In this study, the most frequently cited reason for treating drinking water was to kill

germs. This is in line with a study done in Nigeria among caregivers of under five-year-old children, which reported that the main reason for chlorinating water was to kill germs or bacteria (Ibrahim *et al*., 2017). In the current study, lack of money or fuel and shortage of time was identified as barriers to treatment of water. UNICEF (2008) pointed out that boiling as a method of treatment of water at
household level has some disadvantages such as it is time consuming to initially heat and thereafter cool the water, lack of taste of water, and it incurs costs in buying the fuel or wood. Inaccessibility to cash influences consistent household water treatment among primary caregivers especially in the areas of endemic poverty (Narzetti & Marques, 2020). Use of chlorine based water guard for treating water is considered most effective and easy to use yet it was rarely practiced in this study. This may be because the participants perceived it to have bad taste, chemical and expensive. Botlagunta *et al.,* (2015) pointed out that chlorination of water is cost effective in attainment of water goals. While, Solomon et al (2020) noted that the smell and taste of chlorine-based water treatment are not barriers to its use, especially, if individuals are encouraged to use it until they get used to the smell.

Conclusion

Based on the findings of this study, mothers had positive attitudes towards breastfeeding. However, barriers such as child sickness, breastfeeding is too tiring, child's addiction to breastfeeding, inconvenience and return to work influenced continued breastfeeding for a longer duration. Therefore, programs should consider the perceived barriers when designing interventions to promote breastfeeding up to two years or beyond in informal settlements in Kenya. Because of the numerous benefits of breastfeeding, more efforts should be focused on enhancing understanding of the benefits of breastfeeding up to two years or beyond.

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