Relationship between Maternal Knowledge on Exclusive Breastfeeding and Breastfeeding Practices Among Mothers with Infants (0-6 Months) in Kibera Slums, Nairobi County, Kenya

Mucheru Patrick, Waudo Judith, Chege Peter

Department of Food, Nutrition and Dietetics, Kenyatta University, Kenya.

Corresponding Author: Mucheru Patrick

Received: 16/08/2016 Revised: 06/09/2016 Accepted: 09/09/2016

ABSTRACT

Background: Breast feeding is the best known way of providing ideal food for the healthy growth and development of the infants. Exclusive breastfeeding has been demonstrated to have profound benefits both short-term and long-term to the mother and the infant. Despite the strong evidence on the benefits, recommended breastfeeding practices still remains low in urban slums. Women in urban poor settings usually face complex situations concerning breastfeeding due multiple challenges frequently dictated to them by their circumstances and context. Research has demonstrated that breastfeeding practices are associated with maternal knowledge. This study therefore was aimed at assessing the relationship between maternal knowledge on exclusive breastfeeding and breastfeeding practices among mothers with infants aged 0-6 months in Kibera slum.

Materials and Methods: This study adopted a cross-sectional analytical study which consisted of 293 mother-infant pairs attending health facilities within Kibera slum.

Results: Study findings revealed majority of the respondents (98.3%) knew that exclusive breastfeeding was beneficial and (60.8%) had high knowledge on exclusive breastfeeding. However, only (19.2%) knew the benefits of colostrum. The rate of exclusive breastfeeding practice was 60.8% and mothers who initiated breastfeeding at the recommended time were 73.4%. However, about half (44.7%) of the mothers still gave post-lacteal feeds regardless of the high knowledge. The results further showed that only the practice on introduction to food was significantly associated with maternal knowledge. Nevertheless, other practices were not significantly associated with maternal knowledge.

Conclusions: Maternal knowledge has been found to associate with exclusive breastfeeding and breastfeeding practices. However it is good to note that high maternal knowledge on exclusive breastfeeding does not necessarily translate into practices.

Keywords: Breastfeeding practices, Exclusive breastfeeding, Maternal knowledge on EBF.

INTRODUCTION

Scientific evidence has constantly revealed that exclusive breastfeeding from birth to 6 months plays an important role in ensuring proper growth and development of a child. Exclusive breastfeeding is essential for neonatal and infant survival, health impact on child nutrition as well as child development. [1] Epidemiological evidence indicates that exclusive breastfeeding in the first six months stimulates babies’ immune system and protects them from acute respiratory infections and diarrhoea, two major causes of infant mortality in the developing world. [2,3] The major sources of breastfeeding information to the mothers are the health facilities where they receive breastfeeding counseling. [4-6]
Maternal knowledge on exclusive breastfeeding is very important. A study conducted in Kibera slum demonstrated that most of the mothers had limited knowledge on exclusive breastfeeding. [6] Therefore, the need to investigate the knowledge levels on breastfeeding among mothers in Kibera slums. Scientific evidence reveals that maternal knowledge on exclusive breastfeeding in certain aspects has been reported to be positively associated with initiation, exclusiveness and duration of breastfeeding. [4,7-9]

Majority of the mothers in Africa fail to practice exclusive breastfeeding as recommended. [10] Exclusive breastfeeding for infant less than six months has been on the rise. [11] However, in developing countries, only 37% of infants less than six months old are exclusively breastfed. In Africa, less than one third of infants under six months old are exclusively breastfed. [12] Global initiatives such as the UNICEF and WHO Baby-friendly Hospital Initiative (BFHI) and the International Code of Marketing of Breast-milk Substitutes shows that, with political will and dedicated resources, it is possible to achieve dramatic improvement.

The rate of exclusive breastfeeding in Kenya among infants below 6 months rose from 13% [13] to 32 % [14] and to 61%. [15] The prevalence of exclusively breastfeeding at six months has also increased from 3.2% in 2003 to 3.6 % in 2010. [14] Despite the improvement, Kenya is ranked among the lowest in east Africa region where the prevalence is 42%. [16] Various studies have been done on factors affecting exclusive breastfeeding. [4] but few studies have been on maternal knowledge and how this knowledge translate into the recommended breastfeeding practices.

MATERIALS AND METHODS

Study site and population

The study was carried out across ten health facilities within Kibera slums which were selected using simple random sampling. Mothers-infant pairs were selected using systematic random sampling for face to face interviews. A total of 293 mothers-infant pairs attending selected health facilities were interviewed between April and May 2015.

Maternal knowledge

Maternal knowledge was based on a score. The score on exclusive breastfeeding was based on two scales (“1”, “0”). A score of ‘1’ was awarded for a correct answer while a score of ‘0’ was awarded for a wrong answer. A total score was computed for each of the mother out of the maximum score of 10. The mothers’ knowledge on exclusive breastfeeding was categorized into three; low for those who had a score of 0-4; average for those with a score of 5-7 and high for those who scored 8 and above. [17,18] The knowledge score was computed from the knowledge based on the exclusive breastfeeding guidelines in MIYCN 2013. [19]

Exclusive breastfeeding practices

Both structured and semi-structured questions were developed from the Maternal, infant and young child nutrition guidelines in order to elicit the practices on exclusive breastfeeding (Division of nutrition, 2013). [19]

Data analysis

CSPro version 6.1 Software was used for data entry and verification. SPSS version 16 was then used for analysis. In respect to maternal knowledge, a point was awarded to each correct answer and a sum of all points was computed. The mothers’ knowledge on exclusive breastfeeding was further categorized into three; low for those who had a score of 0-4; average for those with a score of 5-7 and high for those who scored 8 and above. The knowledge score was computed from the knowledge based on the exclusive breastfeeding guidelines in maternal and infant young child nutrition (Division of nutrition, 2013). [19] Additionally, standard deviation and mean maternal knowledge score was also computed.

In regards to maternal knowledge and exclusive breastfeeding practices a chi
square was used to test for the association between the two variables.

**Ethical consideration**

Authority to conduct the study was granted by Graduate School, Kenyatta University. Ethical clearance was granted by Kenyatta University Ethical Review Committee. Permission to conduct the research was granted by the National Commission for Science, Technology and Innovation (NACOSTI). Permission to conduct the study was obtained from the medical superintendent. At the facility level, informed signed or thumb print consent was granted by the respondents. Confidentiality was assured before carrying out the research.

**RESULTS**

**Demographic and socio-economic Characteristics of the respondents**

Both sexes of the infants were almost equally represented with 49.1% of the infants being males and 50.9% females. The majority of the infants were in the range of 2-3 months. Most of the mothers were young with almost a half (47.1%) being between the age of 21-24 years. Moreover, a greater percentage (88.1%) of the mothers was married. In regard to education most of the respondents (36.2%) reported secondary school as their highest level of education. However, it was notable that only 1.7% had university and 1.4% had no any formal education. Concerning occupation (64.2%) of the mothers were housewives and more than half (66.2%) of the participants depended entirely on their spouses. Furthermore, the study revealed that majority of the mothers (64.16%) was multiparous.

**Maternal Knowledge on Breastfeeding Aspects**

Maternal knowledge on various breastfeeding issues is crucial in determining how much the mothers understand. Overall, the mothers were knowledgeable on the breastfeeding aspects presented. Almost all of the mothers 98% acknowledged that breastfeeding should be the baby’s first feed and 59% agreed that the baby should be breastfed for 2 years and more. Furthermore, 79.9% knew that infants should be exclusively breastfed for six months without giving anything else. However, it is worth noting that only 19.2% knew about the benefits on colostrum (Table 1).

**Table 1: Maternal Knowledge on Different Aspect of Breastfeeding among mothers with infants aged 0-6 months in Kibera slums**

<table>
<thead>
<tr>
<th>Knowledge aspects</th>
<th>N=293</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusive breastfeeding is beneficial</td>
<td>288</td>
<td>98.3</td>
<td></td>
</tr>
<tr>
<td>Breast milk should be given immediately after birth</td>
<td>287</td>
<td>98.0</td>
<td></td>
</tr>
<tr>
<td>Colostrum should be fed to the baby</td>
<td>280</td>
<td>95.6</td>
<td></td>
</tr>
<tr>
<td>Infant to be breastfed on demand</td>
<td>277</td>
<td>94.5</td>
<td></td>
</tr>
<tr>
<td>Correct definition of EBF</td>
<td>275</td>
<td>93.9</td>
<td></td>
</tr>
<tr>
<td>Infants should be exclusively breastfed for 6 months</td>
<td>234</td>
<td>79.9</td>
<td></td>
</tr>
<tr>
<td>Correct benefits on EBF</td>
<td>210</td>
<td>71.7</td>
<td></td>
</tr>
<tr>
<td>Infant should be put on breast within 30 minutes to 1 hour</td>
<td>182</td>
<td>62.1</td>
<td></td>
</tr>
<tr>
<td>Baby should be breastfed for 2 years and more</td>
<td>173</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>Benefits of colostrums (N=281)</td>
<td>182</td>
<td>64.7</td>
<td></td>
</tr>
</tbody>
</table>

**Level of Maternal Knowledge on Breastfeeding practices**

Almost two-thirds of the mothers had high knowledge on exclusive breastfeeding. Moreover, the mean knowledge score for all mothers on exclusive breastfeeding was also high at 7.70 with a standard deviation of ±1.47 (Figure 1).

**Breastfeeding Practices**

Mothers who practiced exclusive breastfeeding were 60.8%. The rate of timely initiation of breastfeeding (within 1 hour of birth) was 73.4% while those who
initiated after 1 hour were 26.6%. In respect to reasons for delaying the initiation of breastfeeding various reasons were given, caesarean section (9%) while 18% said their infant were sick. Moreover, majority of the mothers (30.8%) admitted that they were sick, 21.8% had delayed milk secretion while 5.1% had post-partum haemorrhage and 5.1% were advised by mother-in-laws to delay breastfeeding initiation. However, 10.2% were as a result of the infant being asleep.

The study findings also revealed that a few of the respondents (4.8%) gave pre-lacteal feed to their infants. The most commonly given pre-lacteal feeds were; plain boiled water (35.7%), water, sugar and salt solution (21.4%), thin porridge (14.3%) while cows’ milk and formula each at 14.3%.

Post-lacteal feeds were still given to the infants. The most common post-lacteal feeds were; plain boiled water (33.8%), water, sugar and salt solution (30.8%), thin porridge (9.8%), honey (3.8%) while cow’s milk and gripe water were at 9% and 6.8% respectively. However, only (3%) of the mothers gave gripe water and porridge and formula milk respectively. A mother during the FGD reported “I have a baby boy and he suckles so much and more frequent to an extent I feel like I can collapse. I am a widow and I don’t have a job so the food that I get is not enough for both of us. Another mothers said that “Humans are born to eat and therefore the breast milk is not enough for my baby” (FGD, Kibera 2015).

Most of the mothers (56.4%) gave post-lacteal feeds to soothe stomach pain, 15.8% gave because they were not around and 12% gave because they thought that the infant had constipation, 1.5% of the mothers gave post-lacteal feeds after the infant vomited and had a diarrhoea, while 9% gave because they believed that the child had a stomachache and lack of enough breast milk. While only (3.8%) gave because they thought that the infant was hungry, 1.5% gave honey to the infant because of their religion. A mother during the FGD reported that “Doing exclusive breastfeeding as an individual is not possible because I must go to work and I cannot afford a fridge to keep the expressed breast milk. The rich people are the ones who can afford” (FGD, Kibera 2015).

** Exclusive breastfeeding based on 24hr recall among mothers with infants aged 0-6 months in Kibera slums **

<table>
<thead>
<tr>
<th>Breastfeeding practices (24 hrs)</th>
<th>N=293</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breastfed in the last 24 hours</td>
<td>288</td>
<td>98.3</td>
</tr>
<tr>
<td>Given liquid/semisolid in the last 24 hrs</td>
<td>71</td>
<td>24.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What liquid did you give (N=71)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porridge</td>
</tr>
<tr>
<td>Plain water</td>
</tr>
<tr>
<td>Glucose water</td>
</tr>
<tr>
<td>Water, sugar and salt solution</td>
</tr>
<tr>
<td>Cow’s milk</td>
</tr>
<tr>
<td>Formula milk</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reason for giving liquid (N=76)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advised by a friend/neighbor</td>
</tr>
<tr>
<td>Thought the baby was hungry</td>
</tr>
<tr>
<td>Work pressure</td>
</tr>
<tr>
<td>Not producing enough milk</td>
</tr>
<tr>
<td>Pressure from the relatives</td>
</tr>
<tr>
<td>Constipation</td>
</tr>
<tr>
<td>Stomach ache</td>
</tr>
</tbody>
</table>

** Multiple responses

Among the 293 mothers who participated in the study, 98.3% breastfed their infants as measured by a 24-hour recall. About a quarter (24.2%) of the mothers gave liquid/ semisolids to their infants. Thin Porridge was the most commonly given liquid at 28.2%. Moreover, the most common reason for giving liquid/semisolid was advice from friends/neighbors at 39.5% (Table 2). **

Relationship between Maternal Knowledge and Breastfeeding Practices

A cross-tabulation and a chi-square were computed to determine whether there was any association between maternal knowledge and various breastfeeding practices.

There was no significant association between maternal knowledge and the practice on whether the mothers ever breastfed their infants (P=0.935). Majority (60.7%) of the mothers who ever breastfed had high knowledge levels, 35.5% had...
Mucheru Patrick et al. Relationship between Maternal Knowledge on Exclusive Breastfeeding and Breastfeeding Practices Among Mothers with Infants (0-6 Months) in Kibera Slums, Nairobi County, Kenya

average knowledge while only 3.8% of the mothers had low knowledge levels. However, among mothers who had never breastfed their child 66.7% had high knowledge levels, 33.3% had average knowledge while there was none who had low knowledge score.

There was no significant association between maternal knowledge and the practice on breastfeeding initiation ($P=0.755$). Most (60.9%) of the mothers who gave a correct response towards breastfeeding initiation had a high knowledge level, 35.8% had average knowledge levels while only 3.3% had low knowledge levels. However, among the mothers who gave a wrong response towards breastfeeding initiation 66.7% had high knowledge levels, 33.3% had average knowledge while there was none who had low knowledge score.

There was no significant association between maternal knowledge and the practice on giving pre-lacteal feeds ($P=0.099$). Half of the mothers who gave pre-lacteal feeds had a high knowledge levels, 35.7% had average knowledge while only 14.3% had low knowledge score. However, among the mothers who never gave pre-lacteal feeds, majority (61.3%) had high knowledge levels, 35.5% of the mothers had average knowledge levels while only 3.2% of the mothers had low knowledge levels.

There was no significant association between maternal knowledge and the practice on giving post-lacteal feeds ($P=0.530$). Majority (63.6%) of the mothers who never gave post-lacteal feeds had a high knowledge score, 32.7% of the mothers had average knowledge levels while only 3.7% of the mothers had low knowledge score. However, among the mothers who gave post-lacteal feeds more than a half (57.3%) of the mothers had high knowledge, 38.9% had an average knowledge while only 3.8% of the mothers had low knowledge score.

There was a significant association between maternal knowledge and the practice on introduction to food by the mothers ($P=0.001$). Majority (64.8%) of the mothers who gave correct response towards introduction to food had a high knowledge score, 33.7% had an average knowledge while only 1.5% had a low knowledge score while 1.5% had a low knowledge. However, among the mothers who gave a wrong response almost a quarter (24.1%) had a high knowledge score, 51.7% had an average knowledge while 24.1% of the mothers had a low knowledge score.

There was no significant association between maternal knowledge and the practice on breastfeeding within the last 24 hours ($P=0.193$). Most (60.1%) of the mothers had high knowledge levels, 36.1% had an average knowledge levels while only 3.8% had a low knowledge score. However, among the mothers who never breastfed within the last 24 hours, (100%) consisting of five mothers only had a high knowledge score.

DISCUSSION

Maternal nutritional knowledge is considered to have a significant impact on the infants’ nutritional status as the mother has the capacity to determine conscious decisions. Varying maternal knowledge levels may determine various exclusive breastfeeding practices. General awareness concerning optimal breastfeeding practices exists in urban poor settings. Nevertheless, the maternal knowledge is not translated into practice and therefore leading to sub-optimal breastfeeding practices. [20] This was substantiated by a KI who said that “Some of the mothers don’t practice what we tell them to do. Because they are the bread winners and due to the poverty levels here, most of them don’t manage to do exclusive breastfeeding” (KI, Kibera 2015).

Mothers still delayed the initiation regardless of their knowledge on breastfeeding initiation. The current study revealed that there was no significant association between maternal knowledge and breastfeeding initiation. This was in
agreement with the findings of a study conducted in Tanzania where 49% of the mothers had delayed initiation.\textsuperscript{21} It was also in agreement with a study done in Arkansas which showed that mothers who had more knowledge were able to have the correct initiation as well as continued breastfeeding.\textsuperscript{22} However, the above findings were in disparity with the findings of the study conducted in southern Ethiopia which showed a significant association.\textsuperscript{23,24}

Additionally, there was no significant association between maternal knowledge and breastfeeding within the last 24 hours. However, the above findings were in disagreement with the findings of the study conducted among Saudi women where the study showed a significant association.\textsuperscript{25,26} However, this was also in disagreement with a study conducted among mothers attending selected public health institution in Addis Ababa which revealed that there was a significant association.\textsuperscript{27}

Mothers in this study were knowledgeable on various aspects on breastfeeding practices. However, infants were still given pre-lacteal feeds. It was notable that there was no significant association between maternal knowledge and mothers who gave pre-lacteal feeds. Mothers regardless of their knowledge on exclusive breastfeeding still gave pre-lacteal feeds. This was in agreement with the findings of a study conducted in Raya Kobo; North Eastern Ethiopia.\textsuperscript{28} Nevertheless, a study in India conducted among prenatal mothers showed that education was important in order to reduce the incidences of mothers giving pre-lacteal feeds.\textsuperscript{29}

There was no significant association between maternal knowledge and mothers who gave post-lacteal feeds. This was in agreement with the findings of a study conducted in korogocho where mothers had poor knowledge and due to that there was early introduction of post lacteal feed.\textsuperscript{20} However, this was in disagreement with a study done in Ethiopia which showed that a significant number of mothers who were knowledgeable did not give post lacteal but instead practiced exclusive breastfeeding.\textsuperscript{30}

Finally, there was a significant association between maternal knowledge and introduction to food by the mothers. Mothers who are knowledgeable are more likely to introduce food to their infants at the desirable moment. The results in this study were in consistent with the findings of a study conducted in Kasarani informal settlement in Molo and similarly a study done in Arba Munich on maternal knowledge of optimal breastfeeding practices.\textsuperscript{4,31}

\textbf{Limitation}

The data collected was from a cross-sectional study and therefore the reported maternal knowledge as well as practices on exclusive breastfeeding may vary over time.

\textbf{CONCLUSION}

Most of the mothers were knowledgeable about exclusive breastfeeding but due to various factors surrounding the urban slums like high level of unemployment and poverty, they are unable to maintain exclusive breastfeeding for six months. There is a great improvement among mothers regarding exclusive breastfeeding practices for instance the national exclusive breastfeeding rates has improved from 32% to 61% currently. Nevertheless, breastfeeding practices such as early initiation of breast feeding, giving colostrums as well as advantages of exclusive breastfeeding to mothers, no pre lacteal feeds, and post lacteal feeds were not practiced at a desired level.

There was no significant association between various breastfeeding practices such as; mothers who ever breastfed their infants, breastfeeding initiation, mothers who gave pre-lacteal, mothers who gave post-lacteal and breastfeeding within the last 24 hours. However, there was a significant association between maternal knowledge and introduction to food by the mothers.
Mucheru Patrick et al. Relationship between Maternal Knowledge on Exclusive Breastfeeding and Breastfeeding Practices Among Mothers with Infants (0-6 Months) in Kibera Slums, Nairobi County, Kenya

(P=0.01). This demonstrates that having adequate maternal knowledge on exclusive breastfeeding does not always translate into practice due to other confounding factors and therefore more need to be done to address the gap.

ACKNOWLEDGEMENT
We would like to thank all the mothers who participated and the assistance by health professionals in various levels who made this study a success in Kibera slum, Nairobi County.

REFERENCES
10. UNICEF. Progress for children: achieving the MDGs with equity. UNICEF; 2010.
19. Division of Nutrition. Maternal, Infant


How to cite this article: Patrick M, Judith W, Peter C. Relationship between maternal knowledge on exclusive breastfeeding and breastfeeding practices among mothers with infants (0-6 months) in Kibera slums, Nairobi County, Kenya. Int J Health Sci Res. 2016; 6(10):221-228.