

Factors affecting the uptake of Exclusive Breastfeeding (EBF) in Kisumu East District, Kenya

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Abstract

Exclusive breastfeeding (EBF) the best means of infant nutrition. This is because it offers great benefits to maternal and child health in general, including prevention of vertical transmission of HIV/ AIDS. This study sought to identify the factors associated with the uptake of EBF among mothers with children aged 0-<6 months. Overall, the uptake of EBF was higher than is seen in other countries in Africa and across the globe. Binary logistic regression identified having male children and ownership of certain assets as positive predictors of EBF uptake. Absence of a chronic disease and knowledge of cultural and traditional practices surrounding EBF were shown to be negatively associated with uptake of EBF.

Keywords: breastfeeding, child health, maternal health

1. Introduction

Exclusive Breastfeeding (EBF) means that a given infant receives only breast milk. No other liquids or solids are given, not even water, with the exception of oral rehydration salt solution, or drops/syrups of vitamins, minerals or medicines (WHO & others, 2003). It is often mooted as the best means of infant nutrition. This is because it offers great benefits to maternal and child health in general (Lau et al., 2015). The United Nations Children's Fund (UNICEF) indicates that infants should be exclusively breastfed, right from the first hour after birth until they attain the age of six months. Thereafter, complementary breastfeeding should continue up to the age of 2 years (Unicef & others, 2012). Indeed, studies have shown that EBF in the first 6 months and continued breastfeeding for the first year of life could prevent 1.3 million child deaths worldwide, making promotion of breastfeeding a key strategy of child-survival programs (Yates, 2009). In the real world situation, however, there are often internal and external factors at play that either promote or discourage EBF. These factors may be social, economic, cultural or behavioural (Kannan et al., 1999; Mascarenhas et al., 2006).

Kisumu county and the larger Nyanza region have been demonstrated to have higher rates of child mortality than other parts of Kenya (KNBS, 2010). In addition, the prevalence of HIV/ AIDS is more than twice the national rate (Chege et al., 2012). Because EBF promotes infant health and development (Lau et al., 2015) and has been shown as a protective factor for vertical (mother-to-child) transmission of HIV (Iliff et al., 2005; Coovadia et al., 2007); it is important to study the factors that influence its uptake, especially in the study area where it's potential to reduce child morbidity and mortality is directly proportional to the same morbidity and mortality rates, if not more.

2. Methodology

2.1 Study site

The study was conducted in Kisumu East district. Kisumu East is one of the constituencies in Kisumu County. Kisumu is a lake city in Western Kenya at 1131m (3711ft). Kisumu County is relatively densely populated compared with the rest of Kenya with a population of 968,909 and an area of 2,085.9 km², Kisumu County has a population density of 460 per square kilometers. The vast majority of the people belong to the Luo ethnic community, the dominant language is Dholuo, but English is also spoken by a majority of the population. The main economic activity is fishing; other economic activities include farming and animal husbandry.

2.2 Study Population

The study population included mothers of 0-<6 month's babies in Kisumu, and those who gave consent to be interviewed. The inclusion criteria for the study was all mothers of 0-<6 month's babies in Kisumu east, and mothers who give consent. While the exclusion criteria was mothers who do not reside in Kisumu, mothers of babies with congenital problems and mothers declined to give consent.

2.3 Study Design and Sampling procedure

This was a mixed methods study that adopted both qualitative and quantitative approaches. The mixed methods design that was used is the convergent design. The convergent design was initially conceptualized as a "triangulation" design where the two different methods were used to obtain triangulated results about a single

topic. . The purpose of the convergent design is “to obtain different but complementary data on the same topic” to best understand the research problem. Sample size was determined using the single population proportion formula to give a sample size of 345. there was a design adjustment effect of 0.9 to give a sample size of 383. There were 4 FGDs conducted. The sampling technique used for the quantitative was random sampling and this was done in order to reduce bias, while the qualitative data was sampled using purposive sampling to attain a total of 8 participants per FGD.

2.4 Data collection

A pre-tested structured questionnaire was administered in English/Dholuo to the mother of the baby, after obtaining informed written consent. The questionnaires were administered at the mothers' home and convenience or at the MCH clinic after obtaining a written consent. The information to be collected consisted of: Social-demographic factors (such as marital status, age, education); Economic factors (Wealth index implied by, sanitary condition, type of fuel for cooking, source of water, employment status) Health factors (These included number of visits to the clinic, place of delivery any chronic illness/ HIV). Knowledge attitude and practices (included any knowledge on EBF and any practices that support or hinder EBF.) Focus group discussions (FGD) were used to collect qualitative data from the mothers. The moderator of the FGD had a guideline of questions to ask so as to ensure that there is an order and to get all the information.

2.5 Statistical analysis

The verified and coded data was entered into a statistical software package i.e. SPSS to assist in data analysis. Descriptive statistics were computed on the level of BF and how many BF. This included prevalence means proportions. Analysis of factors associated with uptake of EBF, quantitative variables were analyzed using Chi square. A multivariate analysis was done on adherence to BF and the other factors including socio demographic, socio economic, knowledge and practices. Adherence to EBF was analysed using cross tabulations with the variables for significance of association and P-values of <0.05 were considered to be statistically significant. The data that was collected from the FGD's was analyzed using thematic analysis.

2.6 Ethical Considerations

Approval to conduct this study was obtained from the Kenya Medical Research Institute (KEMRI) Scientific Steering Committee (SCC) and Ethical review committee. (ERC) A written consent for interview was obtained from each of the mother after explaining the purpose of the study. During the interviews privacy and confidentiality was observed.

3. Results

3.1 Demographic Characteristics of Respondents

The study was oversubscribed with a response rate of 102.1%. This is considered an excellent response rate (Mugenda & Mugenda, 2003). The age of mothers in this study ranged from 14 years – for the youngest – to 40 years – for the oldest. The mean age was 24.8 years ($SD= 4.9$). The age of children ranged from 1 week to 24 weeks with a mean age of 3.3 weeks ($SD= 0.8$). Among the children, majority (58.8%) were female and the rest (41.2%) were male. The birth weight of children ranged from 1 to 4.6 kilograms ($M= 2.98, SD= 0.44$), while their current weight ranged between 2.2 and 10 kg ($M= 5.94, SD= 1.60$). The demographic characteristics of respondents are summarized in Table 1.

Table 1. Demographic Characteristics of Respondents

Variables	Categories	Frequency (n)	Percent (%)
Main type of fuel used by respondents	Wood/ Charcoal	237	60.6
	Paraffin	78	19.9
	Gas/ Electricity	76	19.4
Source of drinking water	River/stream	301	77.0
	Borehole/well	90	23.0
Ownership of items	Radio	256	65.5
	TV	270	69.1
	Stove	237	60.6
	Phone	307	78.5
	Car	18	4.6
	Fridge	63	16.1
Highest level of education	primary school	101	25.8
	secondary school	221	56.5
	Tertiary level	69	17.6
Marital status	Single	30	7.7
	Married	361	92.3
Type of toilet used in the house	Pit latrine	89	22.8
	flush toilet	302	77.2
Employment status	Not working	226	57.8
	Working	165	42.2
Wealth index (SES index)	0-25%	91	23.3
	26-50%	161	41.2
	51-75%	100	25.6
	76-100%	39	10.0
Exclusive breastfeeding	Exclusively breastfed	249	63.7
	Not exclusively breastfed	142	36.3
Place of delivery	Home	36	9.2
	Health facility	354	90.8
Presence of chronic disease	No	329	84.1
	Yes	62	15.9
Number of children	One child	129	33.0
	Two children	133	34.0
	Three children	69	17.6
	Four children	43	11.0
	Five or more children	17	4.3
Current use of contraceptives	No	207	52.9
	Yes	184	47.1

3.2 Knowledge, Attitude and Practice of EBF

Overall, adherence to EBF stood at 63.7%. Insufficient breast milk was the most common reason (27.4%) cited

by mothers to explain why they had not practiced EBF, as shown in Figure 1.

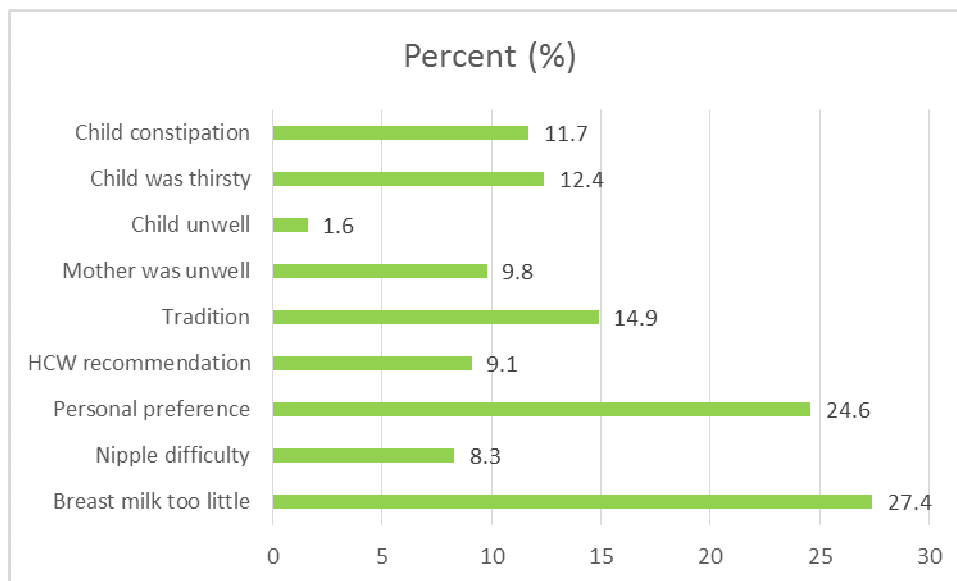


Figure 1. Reasons for non-adherence to EBF

The greater majority (87.7%) of mothers in this study indicated that they were aware of the benefits of EBF. While almost three-quarters (70.6%) indicated that there were economic benefits associated with EBF, only 38.9% said that EBF has environmental benefits. An overwhelming majority (98.0%) felt that there was no down side (disadvantage) to EBF. In addition, most of them (90.5%) indicated that there were either cultural or traditional beliefs in their communities that are in support of EBF.

From the qualitative analysis, a larger majority of the urban women respondents stated that they knew that exclusive breastfeeding is giving a child breast milk only and not giving water or any other fluid unless prescribed by the physician while only half of the respondents from rural areas knew what exclusive breast feeding is all about and those who did not know expressed their interest to know what it is.

“I know exclusive breast feeding is giving a child the breast only and not giving water or any other fluid” 18-28 year old, respondent 7 from urban area.

“I don’t know what it is about but I would like to know about it” 29-40 yr old, respondent 5 from rural areas.

All the respondents from urban areas were aware that exclusive breast feeding is done for a period of six months, while a larger majority of the respondents from rural areas knew that exclusive breast feeding and breast feeding is for six months from the time of birth.

“Exclusive breast feeding is done for six months before introducing food to the child” 18- 28 yrs respondent 7 from rural area.

“Yes I have ever heard that it is done for six months” 29-40 yr old respondent 2 from rural area.

3.3 Bi-variate Analysis

Pearson’s Chi-square was used to analyse the factors associated with uptake of EBF among the study respondents. The level of significance was set at $p < 0.05$. The results of the bivariate analysis are shown in Table 2.

Table 2. Bivariate analysis of factors affecting uptake of EBF

Variables	Categories	Exclusive Breast feeding				
		No (N=142)	Yes (N=249)	Chi-Square	O.R	95% C.I
Mothers age	14-19 Years	15(31.9)	32(68.1)	3.678	2.61	0.89-7.63
	20-24 Years	56(35.0)	104(65.0)		2.27	0.89-5.80
	25-29 Years	46(37.4)	77(62.6)		2.05	0.79-5.31
	30-34 Years	14(34.1)	27(65.9)		2.36	0.79-7.03
	35-40 Years ^{R.C.}	11(55.0)	9(45.0)		1.00	
Gender of the child	Male	44(27.3)	117(72.7)	9.56**	1.97	1.28-3.05
	Female ^{R.C.}	98(42.6)	132(57.4)		1.00	
Childs weight at birth	1-2 kgs	5(29.4)	12(70.6)	0.396	1.20	0.16-8.80
	2.1-2.9 kgs	35(36.8)	60(63.2)		0.86	0.15-4.92
	3-3.9 kgs	100(36.6)	173(63.4)		0.87	0.16-4.81
	4-5 kgs ^{R.C.}	2(33.3)	4(66.7)		1.00	
Number of children	One child	40(31.0)	89(69.0)	8.303	0.93	0.31-2.81
	Two children	46(34.6)	87(65.4)		0.79	0.26-2.37
	Three children	35(50.7)	34(49.3)		0.40	0.13-1.27
	Four children	16(37.2)	27(62.8)		0.70	0.21-2.36
	Five or more children ^{R.C.}	5(29.4)	12(70.6)		1.00	
Main type of fuel used by respondents	Wood/ Charcoal	90(38.0)	147(62.0)	1.025	0.75	0.43-1.31
	Paraffin	28(35.9)	50(64.1)		0.82	0.42-1.61
	Gas/ Electricity ^{R.C.}	24(31.6)	52(68.4)		1.00	
Source of drinking water	River/stream	103(34.2)	198(65.8)	2.488	1.47	0.91-2.38
	Borehole/well ^{R.C.}	39(43.3)	51(56.7)		1.00	
Radio	No ^{R.C.}	67(49.6)	68(50.4)	15.8**	1.00	
	Yes	75(29.3)	181(70.7)		2.38	1.54-3.66
Tv	No ^{R.C.}	33(27.3)	88(72.7)	6.198**	1.00	
	Yes	109(40.4)	161(59.6)		0.55	0.35-0.88
Stove	No ^{R.C.}	72(46.8)	82(53.2)	11.964**	1.00	
	Yes	70(29.5)	167(70.5)		2.09	1.37-3.19
Phone	No ^{R.C.}	27(32.1)	57(67.9)	0.806	1.00	
	Yes	115(37.5)	192(62.5)		0.79	0.47-1.32
Car	No ^{R.C.}	134(35.9)	239(64.1)	0.539	1.00	
	Yes	8(44.4)	10(55.6)		0.70	0.27-1.82
Fridge	No ^{R.C.}	117(35.7)	211(64.3)	0.368	1.00	
	Yes	25(39.7)	38(60.3)		0.84	0.48-1.47
Highest level of education	primary school	26(25.7)	75(74.3)	7.058*	2.22	1.16-4.26
	secondary school	86(38.9)	135(61.1)		1.21	0.70-2.09
	Tertiary level ^{R.C.}	30(43.5)	39(56.5)		1.00	
Marital status	Single	5(20.0)	20(80.0)	3.075	2.39	0.88-6.52
	Married ^{R.C.}	137(37.4)	229(62.6)		1.00	
Type of toilet used in	Pit latrine	34(38.2)	55(61.8)	0.177	0.90	0.55-1.47

the house	flush toilet ^{R.C.}	108(35.8)	194(64.2)		1.00	
Employment status	Not working	69(30.5)	157(69.5)	7.753**	1.81	1.19-2.74
	Working ^{R.C.}	73(44.2)	92(55.8)		1.00	
Wealth index (SES index)	0-25%	32(35.2)	59(64.8)	4.324	1.03	0.47-2.26
	26-50%	67(41.6)	94(58.4)		0.79	0.38-1.62
	51-75%	29(29.0)	71(71.0)		1.37	0.63-3.00
	76-100% ^{R.C.}	14(35.9)	25(64.1)		1.00	
	Health care variables					
Place of delivery	Home	17(47.2)	19(52.8)	2.002	0.61	0.31-1.22
	Health facility ^{R.C.}	125(35.3)	229(64.7)		1.00	
Presence of chronic disease	No	140(42.6)	189(57.4)	34.887**	0.05	0.01-0.19
	Yes ^{R.C.}	2(3.2)	60(96.8)		1.00	
Current use of contraceptives	No	74(35.7)	133(64.3)	0.061	1.05	0.70-1.59
	Yes ^{R.C.}	68(37.0)	116(63.0)		1.00	
	Knowledge Attitude and practices Variables					
Nutritional benefits	No ^{R.C.}	22(45.8)	26(54.2)	2.142	1.00	
	Yes	120(35.0)	223(65.0)		1.57	0.85-2.89
Economic benefits	No ^{R.C.}	50(43.5)	65(56.5)	3.612	1.00	
	Yes	92(33.3)	184(66.7)		1.54	0.99-2.40
Environmental benefits	No ^{R.C.}	92(38.5)	147(61.5)	1.259	1.00	
	Yes	50(32.9)	102(67.1)		1.54	0.99-2.40
Any disadvantages	No ^{R.C.}	138(36.0)	245(64.0)	0.661	1.00	
	Yes	4(50.0)	4(50.0)		1.78	0.44-7.21
Related cultural or traditional practice	No ^{R.C.}	2(5.6)	34(94.4)	16.308**	1.00	
	Yes	140(39.5)	214(60.5)		0.09	0.02-0.38

3.4 Multivariate analysis

Variables that significantly correlated with uptake of EBF among mothers were modelled together using Binary Logistic Regression. The results of the regression showed that male children were almost twice as likely as their female counterparts to be exclusively breastfed (AOR=1.99; CI: 1.21-3.27, $p=0.006$). Mothers who owned either a radio (AOR=2.00; CI: 1.21-3.31, $p=0.007$) or stove (AOR=2.39; CI: 1.43-3.97, $p=0.001$) were more likely to take up EBF than those who didn't own these items. Mothers who didn't have a chronic disease were less likely to practice EBF than those who had a chronic disease (AOR=0.04; CI: 0.01-0.18, $p<0.001$). Mothers who were knowledgeable about cultural practices and traditions related to EBF were less likely to practice it than those who were ignorant of the said cultural and traditional practices (AOR=0.10; CI: 0.02-0.44, $p=0.002$).

4. Discussion

This study found that mothers – in both rural and urban areas were fairly knowledgeable about exclusive breast feeding in the first six months of life. They displayed a good attitude towards EBF, with almost all of them (98.0%) indicating that EBF had no disadvantages. More than two thirds of them agreed that EBF confers both economic and social benefits and is even encouraged by cultural traditions in the areas where they lived. While, knowledge and attitude indicators were high, just under two-thirds (63.7%) of mothers in this study indicated that they strictly adhered to the practice of EBF. While the prevalence of EBF is much lower than the proportion of mothers who expressed reasonable knowledge of the subject matter, it is still almost double or triple the prevalence of EBF reported in other studies done in East Africa, Africa and across the globe – which reported rates of between 5 and 50% (Desai et al., 2014; Maonga et al., 2015).

Several reasons were put forward by mothers to explain why they were not able to adhere strictly to EBF – even

though they were well schooled in its benefits for the most part. The most common reasons for this were lack of sufficient breast milk (27.4%), personal preference (24.6%) and tradition (14.9%). Other reasons identified during the FGDs include being a working mother and the presence of chronic diseases, such as cancer. This is similar to a finding by Maonga et al. (2015), in Zimbabwe, and (Akhtaruzzaman et al., 2015), in Bangladesh, who found that the perception of insufficient breast milk, the child's thirst and cultural reasons were the most common reasons put forward to explain non-adherence to EBF. This study found an EBF non-adherence rate of 36.3% which is similar to – and in some cases lower than – rates reported for other studies in Australia (Scott et al., 2009), Finland (Erkkola et al., 2005) and Canada (Haiek et al., 2007). However, in these countries, demographic and lifestyle factors such as the age of the mother were at play which is contrary to the findings of this study.

From the qualitative responses, the most common factor that emerged to explain the differences in knowledge, attitude and practice of EBF among mothers was their provenance i.e. whether or not they lived in an urban or rural area. There was a higher proportion of mothers from the rural areas compared to urban who were not well versed with EBF. This is in spite of there being high levels of knowledge about EBF in both urban and rural areas. This is similar to findings from an Ethiopian study which found overall, high levels of knowledge about EBF among mothers with differences between rural and urban areas (Asfaw et al., 2015). Binary logistic regression identified several factors that were associated with the uptake of EBF among mothers in this study. The factors that promoted the practice of EBF among mothers in this study were having a child or male gender, ownership of a radio and ownership of a stove. A study done in Uganda showed that male gender in the child was negatively associated with uptake of EBF, contrary to the findings of this study (Ssenyonga et al., 2004). Other studies showed that the child's age not gender was associated with uptake of EBF (Alemayehu et al., 2009). Studies have shown that socio-economic status and education are positively associated with uptake of EBF among mothers (Koosha et al., 2008). This is similar to the finding of this study that ownership of a radio or a stove, which are traditional indicators of socio-economic status in Kenya (Johnston & Abreu, 2013), was positively associated with uptake of EBF.

On the other hand, mothers who didn't have a chronic disease and those who were knowledgeable of traditional and cultural practices surrounding EBF were less likely to practice EBF. Contrary to this study's findings, a study among Old Order Mennonites in Ontario, Canada found that cultural practice and tradition were positively associated with uptake and high rates of exclusive breast feeding (Norris et al., 2013). However, studies in other developing countries indicate a similar trend to the one seen in this study i.e. culture and tradition are negatively associated with uptake of EBF (Maonga et al., 2015).

5. Conclusion

Based on the study findings we conclude that The prevalence of EBF (63.7%) in Kisumu is higher than the national prevalence i.e. 32% (KNBS, 2010). Post lacteal feeding was not uncommon where about (36.3%) of infants had received post lacteal food early age of 4 months. These findings indicate that the breastfeeding support provided by health services is growing strong. Having a male child and ownership of a radio and stove (wealth indicators) were positively associated with uptake of EBF. Absence of chronic disease and cultural and traditional practices were the main barriers to uptake of EBF. We recommend that activities that promote EBF for female infants should be put in place to reverse the gender disparity for EBF. Lastly, the Kenyan government should target negative cultural attitudes and traditions in its pro EBF activities.

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