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Original Research Article

A descriptive analysis of the relationship between place of birth and type of birth attendant with breastfeeding feeding practices among children in Kenya

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ABSTRACT

Background: According to the World Health Organization (WHO), all infants should be breastfed immediately after birth, exclusively for 6 months, and for a minimum of two years thereafter. This study determined the relationship between place of birth and type birth attendant with breastfeeding practices in Kenya.
Methods: Data from 21,773 households participating in the 2015/2016 Kenya integrated household budget survey (KIHBS) were analysed. Respondents provided information on duration and exclusivity of breastfeeding practices as well as place of birth, and the type of birth attendant.
Results: 99.4% of the children 0-59 months had been breastfed with about 62.8 % exclusively breastfed for 6 months. 54% of the children were born in a hospital or health care center. 49% of all the births were attended by a nurse/midwife and 27% by traditional birth attendants (TBA). Those born at home were less likely to EB (Z^2=24.6; p<0.001) than those born in the hospital. Those whose birth was attended by a TBA were less likely to EB for 6 months (Z^2=28.6, p<0.001).
Conclusions: These findings suggest that interventions could focus on identifying factors that hinder women from giving birth in hospitals or health care facilities which are able to provide resources on infant feeding practices.

Keywords: Birth attendant, Breastfeeding, Place of birth

INTRODUCTION

The importance of breastfeeding on infant health especially in low- and middle-income countries (LMICs) is indisputable. It has been established that early initiation of breastfeeding within the first hour after childbirth, exclusive breastfeeding for the first 6 months and continued breastfeeding for two years provide optimal benefits to the child's health and growth.[1] Some short term benefits are reduced infant morbidity and mortality while longer term benefits include improvement in intellectual development, as well as decreased likelihood of development of obesity and other non-communicable diseases in adulthood.[2] Furthermore, breastfeeding has been linked to several sustainable development goals (SDGs) that focus on reduction of poverty, hunger and inequalities, improvement in wellbeing, education, gender equality, and sustainable consumption.[3,4]

Although breastfeeding practices have improved globally, there is still plenty of room for improvement. Using data from demographic health surveys from 57 LMICs, Wu et al found that exclusive breastfeeding increased from an average of 36.5% during the period 2000-2009 to 45.7% in the period 2010-2018.[5] In Kenya data from the 2014/2015 demographic health survey showed that, almost all (99%) children were reported to have been "ever breastfed" with about 60% being breastfed within

the first hour after birth. In 2015 the rates of exclusive breastfeeding were 61%, an increase from 32% in the 2008/09 survey.[6] This indicates that even though breastfeeding practices have improved, there are still more than a third of the children who are not exclusively breastfed in Kenya.

To improve breastfeeding practices in Kenya and other LMICs, several interventions have been put in place. These interventions entail providing education and counselling by health care providers such as doctors and nurses as well as by peer support provided by trained volunteers.[7] For example, in 1990, the World health Organization (WHO) and United Nations Children's Fund (UNICEF) developed the baby friendly hospital initiative to help increase breastfeeding in the hospital maternity wards.[8] Evaluation of the impact of this initiative has indicated improvement in breastfeeding indicators such as exclusive breastfeeding and duration of breastfeeding.[9,10] These findings highlight the potential positive impact of health professionals in educating and encouraging mothers to breastfeed. In addition, since BFHIs are mostly implemented in hospitals, it is likely that mothers who deliver their children in hospital assisted by doctors, nurses or midwives are more likely to be educated on appropriate breastfeeding practices as compared to mothers who have their children elsewhere.

Some studies on the relationship between place of birth and type of birth attendant on breastfeeding practices have found mixed results.[11-13] There are no studies, to our knowledge, that look at this relationship in Kenya. Therefore, the purpose of this study was to identify the relationship between place of birth of the infant and the type of birth attendant with breastfeeding practices specifically exclusive breastfeeding and continued breastfeeding for 2 years using the national wide survey data.

METHODS

This was a secondary data analysis of the Kenya Integrated Household Budget Survey (KIHBS) conducted in 2015/2016. This survey was the second national-wide survey conducted to examine poverty and welfare indicators such as education, health, nutrition, income, and housing conditions with the aim of monitoring the country's progress towards achieving sustainable development goals as well as other country-based economic indicators. Sample size was determined using multistage cluster random sampling.

The sampling frame was the fifth National Sample Survey and Evaluation Program (NASSEP V) created by the Kenya National Bureau of Statistics (KNBS) for national surveys. There were 5360 clusters in the frame that were drawn from 96000 enumeration areas of the 2009 census. In the three-stage sampling process, first 2400 clusters were sampled from the NASSEPV sampling frame, then 16 households were sampled from each cluster and 10 households were then sampled for this survey with the remaining 6 being reserved for a different survey. The data were collected between September 2015 and August 2016. A high response rate of 91.3% was achieved by this survey, with 21,773 households out of 23,852 successfully interviewed.

Ethical approval

This study was a secondary data analysis of publicly available KIHBS dataset and therefore ethical approval was not needed.

Measurable outcomes

Data were collected using interviewer administered questionnaires. Respondents were mothers or caretakers of the children 0-59 months old. Data included in this analysis were for children 0-59 months years old with complete records of breastfeeding practices Breastfeeding practices analysed in this study were, if the child was ever breastfed, if the child was breastfed exclusively for 6 months, and if the child was breastfed for at least 2 years.

To determine initiation of breastfeeding, the respondents were asked "Has NAME ever breastfed?". The responses were "yes", "no", or don't know". Exclusive breastfeeding was measured using the question "For how many months was (NAME) exclusively breastfed?" The responses were given in number of months which were then recoded to "less than 6 months" and "over 6 months". Lastly, for continued breastfeeding for 2 years, the respondents were asked "for how long was (NAME) breastfed?" and the responses were given in the number of months. These were then recoded to "0-6 months", "7-12 months", "13-23 months" and "24 months and above".

Respondents were asked to provide information on where the infant was born using the question "Where was (NAME) delivered?" and the responses provided were either in the, "hospital", "health center", "clinic/dispensary", "maternity home", "at home", "other" and "don't know". These responses were then recoded into 3 categories as, "hospital/health care center", "maternity home/dispensary", and "at home/other/ don't know". Information on the birth attendant was measured using the question, "Who assisted in birth of (NAME)?" and the responses were, "doctor", "midwife/nurse", "traditional birth attendant (TBA)", "trained TBA", "self", "other", and "don't know". These were then recoded into 5 categories with self/other/ don't know combined into one category.

Data analysis

Data were analysed using IBM SPSS statistics version 27. Descriptive statistics were summarized in frequencies and percentages. To identify relationships between place of birth, birth attendant and the mode of breastfeeding, chi-square statistics were used.

RESULTS

A total 12607 children aged 0-59 months were included in the study. Almost all the children 99.4% had been "ever breastfed". Among children 6-59 months old (n=11386), 62.8% were reported to have been exclusively breastfed for at least 6 months. Only 36.6% of the children who had stopped breastfeeding (n=7941) were reported having been breastfed for 24 months or more as shown in Table 1.

Most of the children (54.3%) were born at a hospital or health care center, 40% were born at home while the rest (7%) were born at a clinic/dispensary or a maternity home as shown on Figure 1. About half (49.2%) of all the births were attended by a midwife or a nurse with about 20% and 6.4% attended by a traditional birth attendant (TBA) or trained traditional birth attendant (TTBA) as illustrated in Figure 1.

Table 1: Breastfeeding practices of children 0-59 months in Kenya.

		N	%
***Ever breastfed, (n=12607)**	Yes	12513	99.4
	No	58	0.5
#Exclusive breastfed (n=11386)	<6months	4185	37.2
	>6 months	7051	62.8
^Duration of breastfeeding (n=7941)	0-6 months	428	5.4
	7 months-12 months	1520	19.1
	13-23 months	3087	38.9
	24 months and above	2906	36.6

*Data was analysed for children 0-59 months; # data was analysed for infants 6-59 months; ^ data analysed for 0-59 months children who were no longer breastfeeding. Data Source KIHBS 2015/16.

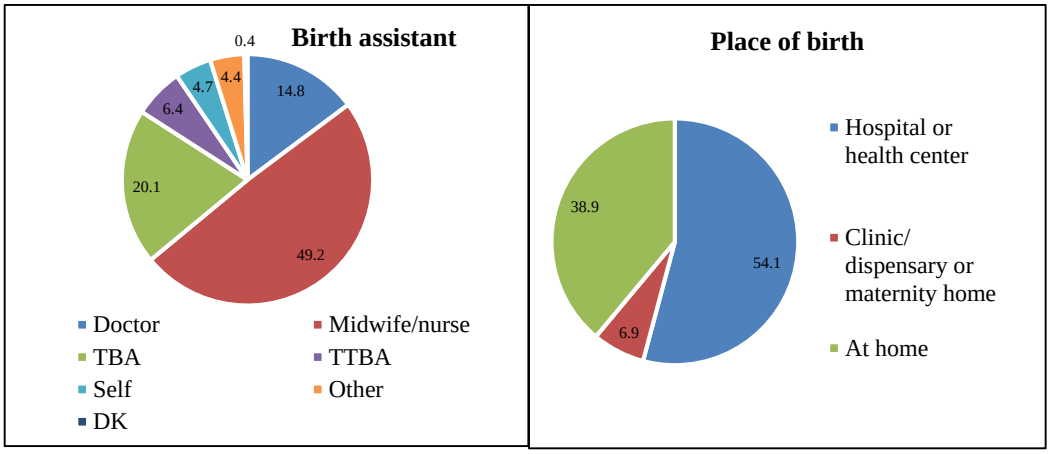

Figure 1: Place of birth and birth attendants of all births of children 0-59 months in Kenya.
Data for children 0-59 months old (n= n=12607) was derived from the 2015/2016 KIHBS.

Table 2: relationship between place of birth and birth attendant with exclusive breastfeeding in children 6-59 months in Kenya.

Place of birth		EBF<6 months	EBF>6 months	X	P
Hospital or health center	N (%)	2038 (34.1)	3943 (65.9)		
	Adjusted residual	-7.4	7.4		
Clinic/dispensary or maternity home	N (%)	293 (37.8)	482 (62.2)		
	Adjusted residual	0.3	-0.3	58.66	<0.0001
At home	N	1854	2626		
	%	(37.8)	(62.2)		
	Adjusted residual	7.4	-7.4		
Birth attendant					
Doctor	N	521	1091		
	%	(32.30)	(67.7)		
	Adjusted residual	-4.4	4.4		
Nurse/midwife	N	1972	3503		
	%	(36.0)	(64.0)	55.926	<0.0001
	Adjusted residual	-2.6	2.6		
TBA	N	901	1414		
	%	(38.9)	(61.1)		
	Adjusted residual	1.9	-1.9		

Place of birth		EBF<6 months	EBF>6 months	X	P
TTBA	N	298	445		
	%	(40.1)	(59.9)		
	Adjusted residual	1.7	-1.7		
Self, other, don't know	N	493	595		
	%	(45.3)	(54.7)		
	Adjusted residual	5.8	-5.8		

Data was analysed for children 0-59 months old from KIHBS 2015/16.

Table 3: Relationship between place of birth and type of birth attendant with breastfeeding for 2 years and above in children 0-59 months in Kenya.

Place of birth		0-23 months	<24 months	X	P
Hospital /health care center	N (%)	2735 (66.3)	1392 (33.7)	44.36	<0.0001
	Adjusted residual	5.5	-5.5		
Dispensary/maternity homes	N (%)	365 (67.5)	176 (32.5)		
	Adjusted residual	2	-2		
At home, other and don't know	N (%)	1935 (59.1)	1338 (40.9)		
	Adjusted residual	-6.6	6.6		
Birth attendant					
Doctor	N (%)	688 (63.5)	396 (36.5)	61.099	<0.0001
	Adjusted residual	0	0		
Nurse/midwife	N (%)	2570 (67.1)	1262 (32.9)		
	Adjusted residual	6.5	-6.5		
TBA	N (%)	1037 (60.8)	668 (39.2)		
	Adjusted residual	-2.5	2.5		
TTBA	N (%)	273 (52.9)	243 (47.1)		
	Adjusted residual	-5.1	5.1		
Self, other, don't know	N (%)	467 (58.2)	336 (41.8)		
	Adjusted residual	-3.3	3.3		

Data was analysed for children 0-59 months old from KIHBS 2015/16.

Significantly more of children (6-59 months) born in the hospital were exclusively breastfed for 6 months as compared to those born at a dispensary or at home (65.9% versus 62.2% and 62.2%; χ^2=58.66; p<0.0001). Similarly, significant differences were found among birth attendant categories with those assisted by the doctor reporting the highest level of EBF at 67.7% as compared to 64%, 61%, 60% and 55 % of births attended by nurses/midwives, TBA, TTBA and by self/other/don't know respectively (χ^2=55.93; p<0.0001) as shown in Table 2.

It was found that there were significant differences between place of birth and type of birth attendant, as well as breastfeeding for two years and more. About 34% of those born in the hospital were breastfed for more than 24 months compared to 41% and 33% of those born at home and in a dispensary/clinic respectively (χ^2=44.356; p<0.0001). The highest percentage (47%) of breastfed children were assisted by a TTBA during birth. Interestingly, those assisted by nurse/midwife or doctor showed the lowest levels of breastfeeding for 24 months at 33% and 37% respectively (χ^2= 61.099; p<0.0001).

DISCUSSION

The purpose of this study was to determine if the place a child was born and the type of birth attendant influenced breastfeeding practices specifically, exclusive breastfeeding for 6 months and continued breastfeeding for at least 24 months. Children born in hospitals and health care centers were more likely to be exclusively breastfed for 6 months as compared to those born at home. Children whose birth was attended by doctors and nurses/midwives were more likely to be breastfed exclusively for 6 months as compared to those that were assisted by traditional birth attendants. Interestingly, children born at home reported the highest likelihood of still breastfeeding at 24 months as compared to those born in hospitals and health care centers. Similarly, those assisted by traditional birth attendants were more likely to be still breastfeeding for 2 years as compared to those assisted by doctors and nurses/midwives.

Majority (99%) of the children in this study had been breastfed at some point with 63% having been exclusively breastfed for 6 months. Since almost all of the children had initiated breastfeeding, relationships between initiation of breastfeeding and place of birth and

type of birth attendant were not further examined. The rate of exclusive breastfeeding found in this survey was similar to that reported by the Kenya Demographic Health survey which reported a 61% rate of EBF in 2014/15 indicating an increase from 32% in 2008/09.[6] The rate of exclusive breastfeeding in Kenya is relatively higher than the average in lower and middle income countries whose average was about 41% during the 2010-2018 period.[5] This may indicate that interventions to improve breastfeeding practices in Kenya have been successful although there are still more than 30% of children who are not breastfed.

A review and meta-analysis by Kim et al, found that breastfeeding interventions provided by health care professionals had the highest effectiveness *(*OR=3.26; 95% CI: 1.89-5.61) as compared to those provided by lay persons (OR=2.81; 95% CI: 1.45-5.43) in improving EBF in LMICs.[14] In the same study, interventions that were found to be most effective were those that were conducted in both hospital and community settings. In our study, children born in hospitals and health care settings and those whose birth was assisted by doctors, midwives or nurses showed higher likelihood of EBF for 6 months than those born at home and attended to by traditional birth attendants. It may therefore be inferred that these mothers received some form of training and/or support that encouraged EBF from health care professionals in the health care settings probably related to the Baby Friendly Hospital Initiative (BFHI).

About 70% of hospitals in Kenya were designated as baby friendly between 1994-2008 but that number decreased substantially after health care was devolved in 2010.[15] The BFHI encompasses 10 steps that re considered important in encouraging breastfeeding in the hospital and after the mother and baby are discharged. There has been significant research demonstrating the link between EBF and the BFHI in which children born in hospitals that adhere to the steps in this initiative are more likely to develop EBF.[16] Other studies have utilized the BFHI model in the community and have seen an improvement in exclusive breastfeeding. For example, Kimani-Murage et al found that children from mothers who received counselling from trained community health workers using the BFHI model were more likely to breastfed as compared to those who received standard care.[17]

Our findings indicated that potential benefits of hospital/health care delivery did not seem to persist for long. This is because children born at home were found to be more likely to be breastfed for longer than 24 months than those born in hospitals. Majority of the studies on barriers to breastfeeding mostly focus on exclusive breastfeeding and not continued breastfeeding for 2 years. One barrier that has been identified in such studies is women returning to work and not having sufficient time to breastfeed or resources to express and store milk.[18] A study that looked at breastfeeding beyond 1 year was done in Australia and found that women who had to go back to work were less inclined to continue breastfeeding for 12-24 months.[19] Using national data from 2008/2009 KDHS data, Kitui et al found that women who were more educated, from wealthier households, and those who had health insurance were more likely to deliver at a health facility.[20] Therefore, it is possible that women who had access to the hospital for delivery were likely to have work to return to and could not breastfeed continuously for 2 years. However, more studies are needed to determine the actual reasons why women who have better resources to support exclusive breastfeeding are likely to cease breastfeeding before the recommended 24-month period.

The main limitation of this study was the use of secondary data analysis as it limited the number of variables that could be analysed. Also, data collection was subjective in nature and therefore reporter bias could have been present. However, the major strength of this study was the use of nationally representative data collected using a standard method throughout the country.

CONCLUSION

Our study found that children born in health care facilities assisted by trained professionals were more likely to exclusively breastfeed for 6 months as compared to those born at home assisted by traditional birth attendants. However, only those born at home were shown to have been breastfeeding for 2 years and more. Maternal education on breastfeeding in health care facilities could have contributed to the higher levels of exclusive breastfeeding among those children born in hospitals since there are a number of hospitals in Kenya that adhere to the baby friendly initiative that encourages breastfeeding education and counselling in hospitals. For breastfeeding for 2 years, it is possible that women who gave birth in the hospital worked outside the home and had to go back to work. Findings from our study can be used to design more pointed studies that investigate the type of breastfeeding-based education provided by traditional birth attendants and how that training can be improved. Also, findings from this study can be used to assess some of the barriers to hospital or health care facilities child delivery with the hope of having more mothers have their children in facilities that promote optimal breastfeeding practices.

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