

Breastfeeding Mothers' Knowledge on Ten Steps to Successful Breastfeeding in Kapsabet County Hospital, Nandi County, Kenya

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DOI: 10.29322/IJSRP.10.08.2020.p10412

<http://dx.doi.org/10.29322/IJSRP.10.08.2020.p10412>

Abstract: Breastfeeding leads to both short and long-term benefits of a child. It helps reduce infections and mortality among infants, improves mental and motor development, and protects against obesity and metabolic diseases later in the life course. The ten steps are maternity proven practices which help in achieving exclusive breastfeeding which remains a challenge not only to the unemployed mothers but also to the working health care professional hence why this study was carried out with an objective of assessing the knowledge, practices and barriers to exclusive breastfeeding among caregivers/mothers in Nandi County. The core methodological approach involved cross sectional research design through incorporation of both quantitative and qualitative approaches among 184 randomly selected mothers with infants less than 6 months old. Data was collected using researcher-administered questionnaires and a focus group discussion guide. Six focus group discussions were held at the end of the study with both caregivers and mother practicing and those not practicing exclusive breast feeding. Data analysis was done using statistical package for social sciences (SPSS) software version 22. The rate of continuous exclusive breastfeeding after birth was 86 (46.7%) of the children while for those not exclusively breastfed were 148 (80.4%). Maternal knowledge aspects included; mothers' knowledge on when to start breastfeeding after birth which was at 90.2% as well as when introduction of pre-lacteal feeds (48.4%) within two weeks, (46.7%) within one week and (4.9%) in three weeks started. There is need to improve on strategies and capacity building of mothers with limited knowledge on the benefits plus the required duration of exercising the ten steps of breastfeeding.

Key Words: *Mothers, Knowledge, Ten Steps, Successful, Breastfeeding*

1.0 Introduction

Ten steps to successful breastfeeding has been pointed out as one of the most effective preventive health measures to globally reduce child mortality and morbidity (Bartick & Reinhold, 2010). However, there are a number of inequalities in breastfeeding outcomes by socio-economic indicators and by race and ethnicity (WHO, 2012). Low wealth populations in developed and developing nations, as a group, exhibits lower breastfeeding rates, and thus are vulnerable to higher incidences of breastfeeding preventable illnesses.

Kenyan lactating mothers breastfeeding practices extensively differ with the recommended practices. For instance, according to Kenyan Demographic Health Survey, only 32% of the under 6 months children are breastfed yearly, albeit the fact that 97% of Kenyan children are breastfed at some point (African Population and Health Research, 2010). United Nations (2010) found out that, in order to meet the Millennium Development Goals of halving the prevalence of underweight children by 2015, mothers must comply with

the recommended breastfeeding practices. Therefore, the Kenyan government has been promoting the Ten Steps to successful breastfeeding in different regions in Kenya.

These ten steps to exclusive breast feeding by UNICEF (2013) include: having a written breast feeding policy that is routinely communicated to all health care staff, training health care staffs in the skills necessary to implement breast feeding policies, informing pregnant women concerning the management and benefits of breast feeding, assistance of mothers in the initiation of breast feeding within an hour, demonstration to mothers on how to breast feed and maintenance of lactation even if they are separated from their infants, giving infants no food apart from breast milk, allowing mothers to stay with their infants for 24 hours in a day, Encouraging breast feeding on demand, not giving infants artificial nipples and fostering the establishment of breast feeding support groups. When these practices are implemented by hospitals, they have been shown to have direct impact on breastfeeding initiation, duration and exclusive rates (Entwistle, Kendall & Mead, 2010). At initiation, statistics have shown that 98% of Kenyan breastfeeding mothers breastfeed their children.

However, this figure drastically falls to 34% at 3-4 months and ultimately to 32% of the caregivers who exclusively breastfeed to 6 months. This happens despite the fact that the Kenyan government has implemented the Ten Steps to Successful breastfeeding. Research by Britton, McCormick, Renfrew, Wade and King (2007) has shown that supporting the quality of hospital based breastfeeding support services and increasing the number of the Ten Steps practices in place will result in an increased number of women achieving their breastfeeding goals. Thus, this study will explore the knowledge, attitude and practices of care givers on the attainment of this program in Nandi County.

The overall purpose of the Ten Steps to Successful breastfeeding is to increase breastfeeding rates by helping women to achieve their breastfeeding intentions. On average, almost half of all infants 3 months of age are being exclusively breastfed in Kapsabet County Referral (UNICEF, 2013). However, by the time the infants are 6 months old, less than 25% are exclusively breastfed. This put the lives of these infants at risk of morbidity and mortality from breastfeeding preventable illnesses such as recurrent diarrhea. Mothers in Nandi County who do not exclusively breastfeed to six months use formulas which have serious short and long term consequences. Thus, the infants are at risk of many health problems including gastro intestinal illnesses, respiratory syncytial virus, bacterial meningitis and frequent hospitalization (Nickel, Labbok, Hudgens& Daniels, 2013; Labbok, Taylor, & Nickel 2013). In their childhood and adult life, they are more likely to have ulcerative colitis, higher blood pressure, rheumatoid arthritis and diabetes type 1 and 2. Besides, mothers in Nandi County who do not breastfeed are equally at risk of obesity, type 2 diabetes, osteoporosis and anemia. However, there are still higher risks of protein energy malnutrition in Nandi county and higher child mortality rates in the region.

2.0 Literature Review

Strategies to improve infant and young child feeding (IYCF) are a key component of the child survival and development programs of many nations, supported by UNICEF and the World Health Organization (WHO). They include infant and young child feeding (IYCF) as priorities (WHO, 2006 & Dorea, 2009). Although infants experience variations in how they are cared for, some care giving practices that have been shown to be beneficial for the infant as well as the caregiver. According to Labbok (2001) care giving practices such as breastfeeding and maintaining close physical contact support an infant's health and development (Picciano, 2001).

The decline in the practice of breastfeeding, which started in developed countries like the U.S., has been observed in developing countries as well (Xai, 2012). This decrease in breastfeeding rates around the world has led to serious implications for infant health in developing countries, including infants in the Caribbean (Amador et al., 1994). The decline in exclusive breastfeeding (EBF) has led to an increase in the prevalence of protein energy malnutrition (PEM) in Caribbean, African and Asian countries. Studies have shown that although high initiation rates of breastfeeding in the Caribbean exist, the prevalence and duration of EBF is very low (Scarlett et al., 1996).

Qualitative assessments of Caribbean mother's perceptions, attitudes, and values attached to food items show that infant and child feeding practices vary considerably and that a mother's attitudes toward breastfeeding are strongly influenced by her female role models, including mother, mother-in-law, and grandmother (Chambers et al., 2007). Because the decision to breastfeed is often made long before a woman becomes pregnant, breastfeeding promotion programs should focus on educating women during their preconception years. Caregivers worldwide adopt diverse infant feeding practices; including mixed feeding, replacement feeding, exclusive breastfeeding as well as pre lacteal feeding and complementary feeding. According to Tanzania National Bureau of Statistics (2010) exclusive breastfeeding and pre-lacteal feeding after birth is still common in some cultures but this changes because as the infant grows exclusive breastfeeding becomes uncommon or is rarely practiced.

Efforts to improve the implementation of the ten steps of breastfeeding rates have been directed at stages of a woman's reproductive experience, especially, during the preconception and prenatal periods, within 24 hours of delivery, and throughout the postpartum period in the hospital and at home (Mannion, Hobbs, McDonald & Tough, 2013). Since 1991 the Baby Friendly Hospital initiative has been implemented in many hospitals and recommend; reduced use of infant formula; nurse assisted initiation of breastfeeding immediately after delivery and referrals to outside breastfeeding resources upon discharge (UNICEF, 2013). However, none of these efforts seem to increase the duration of breastfeeding. Breastfeeding duration is variable and falls below the recommended United Nations Children Education Funds and World Health

Organizations recommendation of exclusive breastfeeding (Mannion et al., 2013). The recommended exclusive breastfeeding duration is from zero to six months. During which time there should be no artificial milk substitutes or other fluids. Thus, to ensure successful exclusive breastfeeding as recommended, ten steps to successful breastfeeding as been pointed out as the best strategy.

According to the UNICEF (2009) the ten steps of practices of breastfeeding to infants less than six months old has increased in all except in the developing region. The developing world has seen a progress from 33% around 1995 to 37% around 2008 which is a relative increase of about 16% (UNICEF, 2011c and UNICEF, 2009a) and currently stands at 36% (UNICEF, 2011a). South Asia, East Asia / Pacific and Eastern / Southern Africa are regions with the highest levels of exclusive breast feeding (44%, 43% and 39%) (UNICEF, 2009e and UNICEF, 2011a). The rates of practicing ten steps to successful breastfeeding are particularly low in West and Central Africa (23%), East Asia and Pacific (28%), Central and Eastern Europe/Common wealth of Independent States (CEE/CIS) with 29% (UNICEF, 2011b). According to Xu et al., (2009) breast feeding in China since mid-1990s in most of the cities has increased to above 80% at the age of four months but this is challenged as very few caregivers manage to reach the national exclusive breastfeeding target of above 80% for six months. Findings of an infant feeding survey in the UK showed that breastfeeding initiation rates were high at 76%, and at one week 45% were still exclusively breastfeeding but at six months this dropped to less than 1% (Scientific Advisory Committee on Nutrition, 2008).

Breastfeeding initiation is universal with 99% of children below six months of age being breastfed with a long duration as 53.6% of children 20-23 months old still breastfeeding (KNBS and ICF Macro, 2010). Breastfeeding has increased from 13% in 2003 to 32% of children below six months being exclusively breastfed while the prevalence rate after six to eight months has been 3.6% (KNBS and ICF Macro, 2010) from 3.2% in 2003. despite the intervention of the Kenyan government, the prevalence has yet to reach the WHO goal of 90% and this value is still below the global prevalence of 37%. in the east African region exclusive breastfeeding is still the lowest at a prevalence of 47% (UNICEF, 2011).

Studies across the world have revealed benefits of breastfeeding both for the mother and the infant. According to a study by *Mihrshahiet al.*, (2008) in Chittagong, Bangladesh, infants who were exclusively breastfed from 0-6months had lower prevalence of diarrhea and respiratory infections as opposed to those who were not exclusively breastfed. Breastfeeding children under the age of two years can potentially reduce or prevent about 1.4 million deaths in the developing world (Black et al., 2008). WHO (2013) suggests that exclusive breast feeding is a desired mode of food provision to developing infants. WHO (2013) and UNICEF (2013) recommend some measures that mothers should put in place for them to sustain exclusive breast feeding which include the need to initiate breast feeding within an hour immediately after

birth. Besides, the mother has to give the child only breast milk without the addition of any drink or food. The mothers should also breast feed on demand. Finally, the teats, pacifiers and bottles should not be used (Cai, 2013).

Dorea (2009) observe that Breast milk has several advantages. To start with, it is natural food that is available to the babies. Breast milk also has all the required nutrients needed by an infant. Thus, feeding the baby exclusively from such milk ensures that a child keeps malnutrition and hunger a bay (Drane and Logemann, 2000). Exclusive breast feeding has also been shown to reduce infant mortality that could arise because of illnesses in the childhood such as pneumonia and diarrhea. To the mother, breast feeding is an ideal mode of family planning. This is because it helps in spacing of children. Other benefits that are accrued from exclusive breastfeeding include protection of the mother against cancer of the ovary and the breast and increment in both national and family resources (Mortensen et al., 2002). Breast feeding infants also helps them respond to respond well towards vaccination and also enables them to develop cognitively.

3.0 Methodology

The study used a cross sectional survey which employed both qualitative and quantitative methods in data collection as per the recommendations of Katzenellenbogen *et al.*, (2002). In this type of study design, either the entire population or a subset thereof is selected, and from these individuals, data are collected to help answer research questions of interest. It is called cross-sectional because the information which is gathered represents what is going on at only one point in time The study aimed at collecting information from respondents on care givers knowledge on the Ten Steps to successful breastfeeding, the attitude of the lactating mothers on the Ten Steps to successful breastfeeding and the practices of the care givers on the Ten Steps to successful breastfeeding. Additionally, the knowledge of the MCH clinic nurse on the Ten Steps to successful breastfeeding was also explored.

The study targeted mothers with their infants 0<6 months old residing within Nandi county by accessing post-natal care at Kapsabet county hospital. A target population of 195 mothers was used but only 184 mothers responded during the study. All breastfeeding mothers visiting the MCH clinic at Kapsabet County Referral Hospital were invited to participate in filling the questionnaires. Systematic sampling was used to select the subjects since it provides equal chance of inclusion, minimizes bias and has great potential to provide good representation.

The sample size was calculated using a formula by Cochran (Israel, 1992); This was adopted because the study only assumes the finite nature of the population and to be more confident that the study meets the required sample size based on the formulation, the acceptable sample size ranged between a minimum ration of parameter to 10 observations.

$$n = \frac{z^2 p(100-p)}{\varepsilon^2} \text{ where}$$

n = the required minimum sample size

p= estimated prevalence of mothers who breastfeed exclusively up to 6 months of infants age (which is 13% as per study by KNBS and ICF Macro, 2010))

ε = margin of error on p (set at 5)

q = 1-p

z= standard normal deviate corresponding to 95% confidence level (=1.96)

By substituting the above equation, it gave 192 respondents

A questionnaire with both closed and open-ended questions was used to collect both the quantitative and qualitative information on breastfeeding mothers' knowledge on ten steps to successful breastfeeding. The questionnaire was adopted from a face-validated one used in a study in a low-resource urban setting by Ochola (2008) and modified for this study. In addition, a focus group discussion (FGD) guide was used to elicit information on infant feeding practices from the breastfeeding mothers. In order to pre-test the questionnaire on the length, content, question wording, and language, eight respondents (5% of the total sample) from Nandi attending PNC were interviewed. This was necessary to facilitate modifications on the questionnaire by correcting mistakes. This also ensured that the researchers conducted the interviews in a standardized way.

Additionally, questionnaires were revised by team leaders and the recommended modifications to specific items were done to suit the study objectives. Ensuring that the questionnaire content represented the study objectives enhanced content validity. Questionnaires were also pretested in Moi Teaching and Referral Hospital before actual data collection began. Finally, during data collection the questions were paraphrased and repeated severally so as to ascertain whether the respondents had comprehended the questions.

The collected data was checked, coded, cleaned and entered into SPSS software for analysis. All the analysis of quantitative data was done using the Statistical Package for Social Sciences (SPSS) version 22. Descriptive statistics such as frequencies, percentages, means, standard deviation and median were used to describe maternal knowledge, sources of breastfeeding information and maternal delivery history. Frequencies and percentages were used to describe the infant's and maternal age since the data was not normally distributed. In reporting exclusive breastfeeding rate, infant age is disaggregated as 0, 1, 2, 3, and 4 and 5 months as recommended by WHO (2008) on indicators of infant and young child feeding.

Data from focus group discussions was transcribed, responses arranged in general categories identified in the discussion guide then coded. Common themes were identified, inferences made from each theme and conclusion drawn then triangulated with the data from the questionnaire.

Clearance to obtain a research permit for the study was sought from Kisi university graduate school. Research permit was also obtained from National Council for Science, Technology and Innovations and the Management of Kapsabet County referral Hospital to conduct the study. Informed consent was obtained from the mothers before conducting the research. The information obtained from the study participants was handled with utmost confidentiality.

4.0 Results

Education Level

The breastfeeding mothers were asked to indicate their education level in the questionnaire. The results are presented in Table 1.

Education Level	Frequency	Percentages
Primary education	61	33.2
Secondary Education	57	31.0
No Formal Education	51	27.7
Post secondary Education	15	8.1
Total	184	100.0

The study found out that 33.2% of the breastfeeding mothers had primary school level of education, 31.0% had secondary school level of education and 27.7% respondents had no formal education while 8.1% of the respondents had post-secondary level of education. The evidence of the association between a mother's level of education and the duration of breastfeeding also varies (Ballard, 2009). In this study, lower than secondary level education was associated with earlier cessation of breastfeeding. While it is not very clear why this is the case, higher education may be associated with higher knowledge and practice of positive health behavior.

Breastfeeding Practices

In addition, the respondents were asked to their breastfeeding practices, it emerged that almost all the children (99%) were ever breastfed; however, more than a third (37%) were not breastfed in the first hour following delivery. The main reasons given for not initiating breastfeeding immediately as per the FGD reports were: little or no breast milk (35%); baby being asleep/tired (23%); baby being sick (13%); and mother being sick (19%). Two in five of the children were given something to drink other than the mothers' breast milk within 3 days following delivery. The main reasons given were that the mother had little or no breast milk (42%) or that the child had an upset stomach (32%) (Table 2).

Table 2 Breastfeeding Mothers Practices after Birth

Time for breastfeeding initiation after birth	Frequency	Percentage
Immediately after 1st hour	166	90.2
More than an hour	18	9.8
Provision of pre-lacteal feeds		
Within one week	86	46.7
After two weeks	89	48.4
After 3 weeks	9	4.9

Table 2 presents information on infant feeding practices since birth. All the mothers in the study breastfed their infants after birth and the rate of timely initiation of breastfeeding (within 1 hour of birth) was 90.2%. This rate is slightly higher than that (58.1%) reported by the Kenya demographic and health survey of 2008-09 and that reported by Ochola (2008), of 30.2% for the mothers from the control group, 43.1% for the mothers from facility-based semi-intensive counseling group and 34.3% for mothers from home-based intensive counseling group in Kibera Kenya.

Sources of Knowledge and Contents of the Ten Steps of Breastfeeding

Majority of the respondents (mothers) (80.1%) reported to have received counseling on breastfeeding (Table 3). The main source of breastfeeding counseling was the health facility (ANC) for (74.2%) of the mothers. The rest (12.6%) received breastfeeding information from family / friends / relatives, (7.3%) from media and (5.3%) from other sources such as the church. In a study carried out by Webb-Girard *et al* in Nakuru, Kenya, 64% of women reported to have received infant feeding counseling (Webb-Girard *et al.*, 2010). Health care providers play an important role in breastfeeding practices by counseling during the antenatal and postnatal visits.

Table 3. Information Knowledge of Breastfeeding Mothers

Source	Frequency	Percentages
Mothers	140	74.2
Relatives	35	12.6
Media	9	5.3

Findings from the FGDs revealed that most of the mothers were not satisfied with the content of breastfeeding counseling offered at the public health facility that most of them visited. It may be important to educate other stakeholders on IYCF a perception that was echoed by respondents in FGDs where most felt that breastfeeding counseling should be brought to the community level and should involve the fathers, grandmothers, employers and the community at large. Similar sentiments were reported in a study by Ochola (2008) in Kibera Kenya. Additionally, it is notable that a high proportion of mothers get information

regarding infant feeding from relatives, friends and peers. This finding is similar to the findings of the FGDs during which the respondents reported that members of the community such as grandmothers and traditional birth attendants are important sources for breastfeeding information. This indicates that apart from the mothers, other members of the community may need to be included in breastfeeding promotion education so that they can pass on the right information to the mothers regarding infant and young child feeding.

Knowledge score was calculated for all mothers on issues of breastfeeding. The mothers who got the answer correctly scored 1 for each of the eight aspects that were asked while those who did not answer correctly scored 0. The mean knowledge score for all mothers was 5.46 (SD 1.4) with a minimum score of 2 and a maximum score of 8. Overall, the mothers had good knowledge on breastfeeding issues. An ANOVA test was done to determine the relationship between them. There was no significant difference in knowledge score among mothers < 25 years, 25-< 35 years and those who were 35 years and above (ANOVA, P= 0.137).

There was also no significant difference in knowledge score for mothers in different marital status (ANOVA, P=0.65) and mothers in different occupations (ANOVA, P=0.16). However, there was a significant difference in the knowledge score among mothers who had primary, secondary education, post-secondary education and those who had no formal education. (ANOVA, P=0.024). The mothers who had secondary school education had the highest score (6.14). This indicates that higher education level of the mother may facilitate better understanding of the ten steps of breastfeeding information. A significant difference was also observed in the knowledge score of mothers who practiced ten steps of breastfeeding and those who did not (ANOVA, P=0.01) for continuous following of the ten steps of successful breastfeeding since birth.

Table 4.7 Breastfeeding Mother’s Knowledge Score On Ten Steps Of Breastfeeding Information

Education level	N	Mean	Standard Deviation	ANOVA; p
Primary education	61	5.24a	1.33	
Secondary education	57	5.41a	1.66	
No formal education	51	5.62a,b	1.52	
Post-secondary education	15	5.83a,	1.09	0.024

Mothers’ Understanding of the Ten Steps of Breastfeeding Concept

Mothers in this group seemed to have a good understanding of the concept often steps of breastfeeding and stated that it meant giving the baby only breast milk without even water for six months. Some mothers reported that they had practiced exclusive breastfeeding with their older children.

The mothers gave the benefits of breastfeeding from their own understanding and also from what they had learnt from the hospital as follows: 'Mother's milk is more important to the baby than any other food as it contains all the nutrients that a baby needs for six months.' as said by one mother. Other benefits that the mothers gave were; breastfeeding helps the baby not to contract many diseases; breast milk is safer and hygienic and is always available; breastfeeding helps a mother not to get pregnant although not always; and that breast milk makes the baby to grow healthy and strong.

5.0 Conclusions and Recommendations

The study concluded that there was a significant difference in the knowledge score among mothers who had primary, secondary education, post-secondary education and those who had no formal education. It was therefore recommended that support group programmer be emphasized in the BFH1 projects, so that breastfeeding mothers have a better understanding and acceptance of intervention in improving the ten steps to successful breastfeeding.

6.0 References

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