

**THE PARTICIPATION OF FATHERS IN BREASTFEEDING PROCESS:
KNOWLEDGE, BELIEFS, AND PRACTICES IN KISUMU, KENYA****Dinga LA^{1*}, Kiage BN¹, and FM Kyallo¹****Aoko Lynette**

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ABSTRACT

Fathers' support is an essential component in ensuring success in improving infant feeding practices which have the overall impact of reducing infant mortality rates by 19%. Fathers are usually not targeted with information on infant feeding at the health facility or community level. Fathers have been identified as lacking knowledge, hence, not able to support the recommended infant feeding practices. The study was conducted in Kisumu East Sub County, Kisumu County, which was selected because of the high infant mortality rate in the region. A nutrition education intervention strategy was employed targeting the fathers with information on breastfeeding and complementary feeding through an experimental study in which 290 father-and-mother to be paired were recruited. There was randomization of study participants into either intervention group (145 pairs) where nutrition education was given, or control group (145 pairs) where nutrition education was not given. Recruitment was of all the women who were 6 months pregnant and attending antenatal clinic at Kisumu County Hospital between January-April 2016. The women gave the contacts of the father-to-be, which enabled follow-up to reach the fathers. Quantitative data were collected from the fathers through a pre-tested structured questionnaire that explored their knowledge of breastfeeding pre-intervention. Qualitative data were collected through focus group discussions to assess knowledge, beliefs, and practices on breastfeeding pre-intervention and post-intervention (9 months later). Results did not show any significant differences in the knowledge level on breastfeeding of fathers in the intervention and control group pre-intervention ($p > 0.05$). Significant differences were observed post-intervention on knowledge levels on initiation of breastfeeding within an hour of birth ($p = 0.01$), continuation of breastfeeding for 2 years and beyond ($p = 0.02$) and exclusive breastfeeding ($p = 0.02$) and group affiliation. A Wilcoxon signed-rank test showed a statistically significant change in knowledge of the fathers in the intervention after receiving the nutrition education sessions ($Z = -10.181$, $p = 0.000$). The group discussions showed that fathers largely saw their role as the provision of food for maternal and infant feeding pre-intervention in both groups, while fathers reported additional roles post-intervention in the intervention group including being a source of motivation and information to the mother. In conclusion, fathers have low knowledge levels on breastfeeding process which in turn affects their influence on breastfeeding practice. Nutrition education involving the fathers increases their knowledge on breastfeeding and influence to breastfeeding practice ultimately contributing to improved breastfeeding practices.

Key words: Father, support, inclusion, breastfeeding, nutrition education, knowledge, Kisumu, Kenya



INTRODUCTION

Evidence of effective ways to assist fathers in their supportive role with breastfeeding is scarce, with limited published examples within the Kenyan context. Effective strategies to support breastfeeding are required because breastfeeding practices in Kenya are still below the World Health Organization recommendations with 61% exclusive breastfeeding rates versus WHO target of 90% [1]. Behavior change strategies for adoption of recommended breastfeeding practices focus on improving the knowledge gaps of mothers with little attention to the influence of fathers on improved infant feeding practices [2]. A mother's decision to initiate and continue breastfeeding has been strongly linked to the father's support and influence [3]. Fathers can make a difference in the rate of infant feeding practices but they need information to be able to do so [4, 5]. Engagement of fathers through educating them on breastfeeding and men's group activities can greatly improve infant feeding and health behaviors [6].

A randomized controlled trial of a two-hour pre-natal intervention with fathers consisting of infant care information as well as encouragement for fathers to advocate for breastfeeding and assist their partner, resulted in 74% v. 41% breastfeeding initiation among women whose partners had attended the class, in comparison with the controls [7]. In Italy, a study found that teaching fathers how to prevent and manage the most common lactation difficulties had a marked, positive impact on breastfeeding continuation. Only 15% of mothers whose partners had been simply told about the benefits of breastfeeding were still breastfeeding at six months; but when the men were individually coached for just 40 minutes on managing common problems (such as pain and discomfort, fear that baby "isn't getting enough" and breastfeeding-issues when mum returns to work) the percentage of mothers still breastfeeding at six months was 25%. The impact was particularly strong among women who had reported difficulties with lactation (4.5% v. 24%)[8].

The objective of this study was to assess the knowledge of fathers on breastfeeding, beliefs, and practices on breastfeeding. There has been less attention on male involvement in infant feeding thus the basis of our study.

MATERIALS AND METHODS

Study location

The study area was Kisumu East, Kenya. The sub-county covers an area of 1,960.2Km² and has a population of 544,166 with 3.24% (14,715) being pregnant women and 25.9% (117,629) women of reproductive age [9]. The study area was selected since it falls within Nyanza region where the highest child mortality rate (33 deaths per 1,000 live births) has been reported with infant mortality rates of 50 deaths per 1,000 live births compared to the national levels of 39 deaths per 1,000 live births [1].

Study design

An experimental study design was used. The study group was identified through the pregnant women who were selected at 6 months gestational age while attending the



antenatal clinic at Kisumu County hospital in Kisumu East Sub County. The contacts of the father-to-be linked to the women who consented to the study were taken and follow up made to the fathers to invite them to participate in the study. Pregnant women were selected as target group during recruitment into the study to allow for nutrition education intervention strategy to have an impact on behavior change prior to delivery. Those who agreed to participate were requested to come with their partners to the health facility for collection of data and nutrition education to the intervention group.

Authorization to conduct the study was obtained from the ethics review committee at Kenyatta National Hospital/University of Nairobi, the County Director of Health in Kisumu and the medical superintendent at Kisumu County Hospital. The respondents were informed of the objectives of the study and the interviewer sought their consent to participate in the study. All information and conversations provided to the investigators by the participant were regarded as confidential.

Sampling

The study group for quantitative data collection was identified through the pregnant women in which there was exhaustive sampling of women who were 6 months pregnant between January and April 2016 and attending the antenatal clinic at Kisumu County hospital. Calculation of the sample size was done using the formula below [10]. The study considered an effect size of 20% difference in the breastfeeding outcome between the intervention and control group based on the intervention of nutrition education targeting both father and mother. The outcome was expected to be better than that of a similar study done in Italy which considered the difference in the effect of the intervention of 15% and used the standard deviation of 0.58[8].

$$n = \frac{2(Z_{\alpha} + Z_{1-\beta})^2 \sigma^2}{\Delta^2}$$

Where:

n- Estimated sample size

Z_α-level of significance (set at 0.95 α=0.05=1.96); **Z_{1-β}**power of the study (80%)

Σ-standard deviation (estimated at 0.58)

Δ- difference in effect of interventions which is required (estimated at 20% based on previous studies)

Hence:

$$n = \frac{2(1.96 + 0.8416)^2 (0.58)^2}{(0.20)^2}$$

$$n=132.$$

Considering a 10% attrition rate, the total sample size was 145 this figure was doubled to 290 since the intervention study would involve an experimental and control group.



A total of 290 husband and wife pairs were recruited. Ten participants were recruited per day from those who agreed to take part in the study from a daily attendance to the antenatal clinic of 75 pregnant women with an approximation of 40% being 6 months pregnant according to the hospital profile. The recruited study participants were linked to the fathers to participate in the study.

For the focus group discussions, 8 fathers were randomly selected from the intervention group and 8 fathers from the control group.

Data collection

Data on knowledge, beliefs and practices was collected through pre-tested structured questionnaires administered to the fathers. Pre-testing was done in Kisumu West Sub County in Osiri sub location, a community with similar characteristics as the study population. Thirty fathers were reached during the pre-testing exercise after which the questionnaire was modified and finalized as necessary for the easy understanding by participants. A discussion guide was used to facilitate qualitative data collection through focus group discussions, which were conducted by a team of three comprising one facilitator and two note takers. All interviews from the focus group discussions were digitally recorded after consent was given. Paper transcripts were used as back-ups.

Information was gathered to assess knowledge on how soon after delivery babies start breastfeeding, use of pre-lacteal feeds, types of other foods given to the newborn baby (including water), adequacy of breast milk alone to support the growth of an infant up to 6 months old and duration of breastfeeding a child. The focus group discussion guide explored the following topics: views on breastfeeding; beliefs and breastfeeding practices and support by the father for feeding of the infant.

Data management and analysis

Data were field edited, coded and entered into the computer software. Statistical package for social sciences (version 21) was used to analyze the quantitative data for both descriptive and inferential statistics. Qualitative data from the focus group discussions were transcribed from the field notes and digital recording, then reviewed. The data were then consolidated into emerging themes along the main thematic lines.

RESULTS AND DISCUSSION

Fathers' knowledge of breastfeeding was assessed. At baseline, there was no difference in the knowledge levels on breastfeeding between the intervention and control groups (Table 1). Post-intervention, a chi-square test was performed and significant differences were found between knowledge levels on initiation of breastfeeding within an hour of birth and group affiliation, $\chi^2 (2, N = 271) = 12.29, p = .01$, knowledge levels on continuation of breastfeeding for 2 years and beyond and group affiliation, $\chi^2 (2, N = 271) = 11.34, p = .02$



and knowledge levels on exclusive breastfeeding and group affiliation, $\chi^2 (2, N = 271) = 13.11, p = .02$ (Table 2).

Educating fathers about the benefits of breastfeeding has an effect on the number of mothers choosing to breastfeed; this education is recommended to take place during the antenatal period and the baby's first quarter [11]. Pre-intervention, fathers' knowledge on breastfeeding was low on aspects of exclusive breastfeeding, similar to results of a cross-sectional study done involving 143 fathers at health centers in the region of North Portugal indicating a significant lack of breastfeeding knowledge among fathers during pregnancy [12]. In our study, fathers in the intervention group received nutrition education with their expectant partners' antenatal visits, resulting in significantly more fathers in the intervention group being knowledgeable about breastfeeding than the control group post-intervention. This may be a pointer that if fathers have more access to information, they are more aware of the benefits of breastfeeding, thus resulting in positive outcomes as identified in studies done [13, 14].

In our study, qualitative findings from the focus group discussions showed that fathers in the intervention group were more knowledgeable on the benefits of breastfeeding post-intervention. Pre-intervention, only mentioned one benefit of breastfeeding, that of enhancing child health. This concurs with another study showing that in the father's view, the mother was not thought of as benefiting in the breastfeeding process [15]. Post-intervention, more benefits were mentioned such as breastmilk containing components that help in avoiding diseases, satisfies the child's needs for nutrients, reduces spending on other types of food, preventing breast engorgement for the mother, helping the mother's uterus to contract, increasing bonding of mother and child, and reducing costs to the parents because of less illnesses as the child is healthy. This shows a possible change in the profile of fathers regarding their knowledge of the matter following the intervention.

Fathers in the control group during the focus group discussions mentioned few benefits of breastfeeding pre- and post-intervention. The fathers' responses were: 'breastfeeding is important to the child until 4 months before other feeds are introduced', and 'breastmilk is a good source of food and supports good growth and development of the child'. The father's knowledge of breastfeeding was low and not in line with WHO recommendations of exclusive breastfeeding until 6 months of age [16].

Pre-test and post-test results of the intervention group during the nutrition education sessions shows the center for post-test scores being much higher than the center for pre-test scores with more spread being observed in the pre-test scores than the post-test scores based on the box plot in figure 1. The results of the pre-test scores appear not to be symmetrically distributed while post-test scores are symmetrically distributed with outliers. The mean score posttest is higher than pre-test. Indeed, median pre-test score was 50% while the post-test score was 83.3% showing a change in knowledge levels.



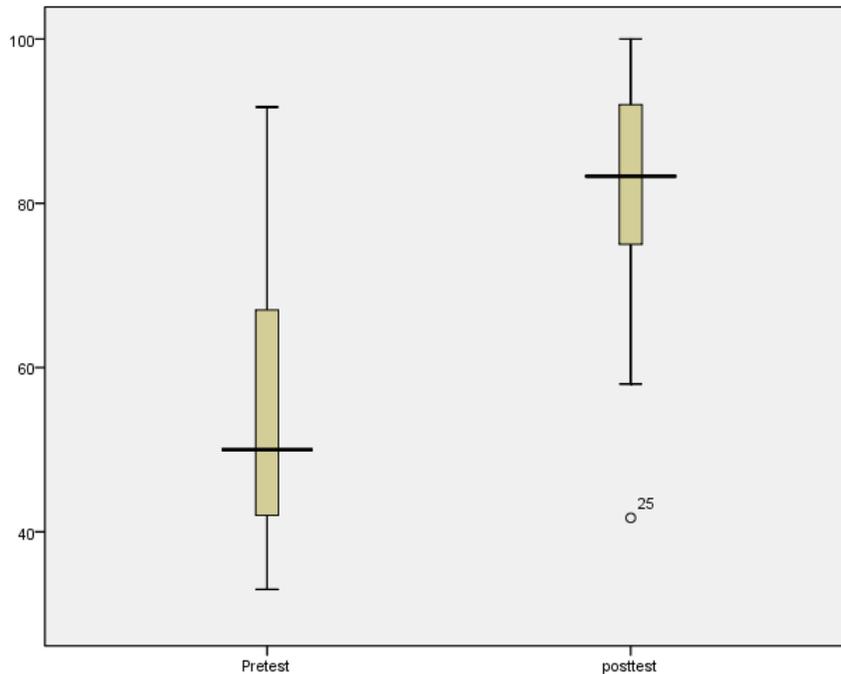


Figure 1: Box plot on pre-test and post-test results for fathers in the intervention group

A Wilcoxon signed-rank test showed that nutrition education involving the fathers elicited a statistically significant change in the knowledge of fathers in the intervention group on breastfeeding ($Z = -10.181$, $p < 0.001$).

A belief on breastfeeding cited by fathers both in the intervention group and control group during the focus group discussions was that a child should not be breastfed outside in the public where there are many people as the child can be cursed. Fathers in the control group also mentioned that it is believed that when a mother is HIV positive, she is not recommended to breastfeed unless the doctor approves it.

Regarding beliefs about breastfeeding, several studies made note of the concern fathers have about breastfeeding in public, terming it as inappropriate [17,18,19]. Breastfeeding in public was also a concern of the fathers involved in this study as evidenced by statements from FGDs conducted in which the fathers felt it was not acceptable for mothers to breastfeed in public as she is exposing her breasts and can invite a curse to the child resulting in poor growth. This can be a pointer on the need to create breastfeeding spaces for mothers in public areas such as workplaces and hospitals to ensure there is a supportive environment to support breastfeeding.

Regarding practices on breastfeeding, fathers in the intervention group stated that most infants are introduced foods early in the community but for them, since they had been taught that it is important to give only breast milk for the first 6 months, they tried to ensure the

child was given only breast milk till the child turned 6 months. They were also supportive of the mother, protecting her against stress so as to produce enough milk by helping out with household chores and taking care of the older children. The fathers also were able to encourage the mother to continue breastfeeding as recommended for the baby to benefit from the breastfeeding process. In the control group, fathers responded that infants are well breastfed in the community up to 3 months of age when they should be given other foods, but breastfeeding continues until one year of age after which it should be stopped as the child is now grown up and can walk.

During the focus group discussions, fathers in the intervention group mentioned more roles they can play in the breastfeeding process post-intervention than fathers in the control group. The fathers in the intervention group mentioned the following roles: provision of food for the family, help in feeding the baby, supporting the mother to ensure information shared on breastfeeding is followed, helping the mother with household chores and taking care of the other children to reduce stress for the mother especially during the 14 days provided for fathers as paternity leave, and providing encouragement and emotional support. Fathers in the control group mentioned two roles they can play which were: buying foods for the child and helping in giving the child food.

Fathers' role in the infant feeding process is important. A lack of familial support, particularly from fathers, has been identified as a barrier to breastfeeding [20]. Fathers' provision of practical support for their breastfeeding partners is critical in promoting breastfeeding, supported by findings from the present study as identified by fathers in the FGDs and in other studies [21, 22,23]. In addition, fathers' role in providing emotional support and encouragement was viewed as valuable in this study, similar to another study done in the United States which proposed that fathers' empathy for their partners during the breastfeeding experience was critical to success [24]. In the present study, it was noted that fathers in the intervention group reported more roles that they played in the infant feeding process than fathers in the control group, which could be a pointer on the fathers from the intervention group applying skills gained from the nutrition education sessions.

CONCLUSION

In conclusion, the fathers had low knowledge levels on infant feeding. Nevertheless, there is a need for them to gain more information and understanding of the breastfeeding process. Fathers should be included in education sessions on infant feeding at the health facility and community levels, all of which may be an important step in infant feeding practices. Fathers are also keen to support breastfeeding mothers but lack the relevant know-how. When fathers are provided with knowledge on infant feeding, they are well equipped to play a more supportive role in infant feeding.

ACKNOWLEDGEMENTS



We wish to thank all the fathers and mothers who participated so enthusiastically in this work. All authors read and approved the final manuscript. We acknowledge funding from German Academic Exchange Service (DAAD).



Table 1: Fathers' knowledge about breastfeeding practices at baseline

Characteristic	Control (N=145)	Intervention (N=145)	χ^2	<i>p</i>
Knowledge about breastfeeding				
Breast milk first feed	95.2 (138)	94.5 (137)	2.52	0.41
Start breastfeeding within 1 hour	52.3 (75)	56.5 (82)	1.39	0.29
Breastfeed for 2 years	55.2 (80)	55.5 (79)	5.88	0.65
Exclusive breastfeeding for six months	40.1 (58)	38.6 (56)	6.21	0.76

Note * $p < 0.05$

Table 2: Fathers' knowledge about breastfeeding practices post-intervention

Characteristic	Control (N=141)	Intervention (N=130)	χ^2	<i>p</i>
Knowledge about breastfeeding				
Breast milk first feed	95.0 (134)	97.6 (127)	3.56	0.11
Start breastfeeding within 1 hour	58.2 (82)	80.0 (104)	6.78	0.01**
Breastfeed for 2 years	56.7 (80)	76.2 (99)	5.11	0.02**
Exclusive breastfeeding for six months	43.9 (62)	67.7 (88)	5.13	0.02**

Note * $p < 0.05$; ** $p = < .01$



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