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Original Research Article

Knowledge on Breastfeeding Practices among Teenage Mothers Attending Public Hospitals in Tharaka Nithi County, Kenya

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Abstract: ***Background***: Breastfeeding is essential for promoting infant health, particularly in the first six months of life. It serves as a critical public health strategy to improve the health of both children and mothers by reducing child morbidity and mortality while lowering societal healthcare costs. Despite its importance, teenage mothers often face distinct challenges in adhering to recommended breastfeeding practices. Targeted health messages offer a promising solution, providing personalized communication that enhances breastfeeding practices and ultimately improves infant health outcomes. ***Method***: A randomized control trial was employed across baseline, intervention, and post-intervention phases. The study targeted teenage mothers with infants less than six months who were attending public hospitals in Tharaka Nithi County. Data collection tools used were structured questionnaires and focus group discussions (FGDs). Quantitative data was analyzed using the statistical package of social sciences (SPSS) version [29]. Descriptive and inferential statistics were used, ANOVA, Chi square and regression analysis. Qualitative data was analyzed thematically and the results presented in narratives, figures, and tables to ensure clarity and comprehensiveness. ***Results*:** The study revealed significant improvements in knowledge on breastfeeding practices among teenage mothers following the targeted messages intervention. Knowledge scores increased significantly ($p < 0.05$) across domains related to early initiation, frequency of breastfeeding and exclusive breastfeeding. On baseline knowledge levels had a one-way Anova of F=72.34 (high) and p=000002 (small) which affirmed that intervention led to a statistically significant difference in breastfeeding practices across test faces. The results were supported by regression results that showed pretest scores to be positive predictors of posttest scores. ***Conclusion*:** Targeted health messages significantly improved Knowledge, attitudes and breastfeeding practices among teenage mothers. These findings underscore the importance of targeted health message strategies in vulnerable groups to improve neonatal health outcomes.

Keywords: Attitudes, Breastfeeding Practice, Teenage Mothers, Targeted Health Messages, Behavior Change Communication, Peer Support, Tharaka Nithi County, Kenya.

INTRODUCTION

Breastfeeding is the ideal, unique, and natural method for nourishing the developing infant during the first few months of life [4]. It has been identified as an important child survival strategy by the World Health Organization [10], and [9-11], estimated that increasing optimal breastfeeding practices could save up to 1.5 million infant lives every year since breastfeeding protects infants against diarrheal diseases, pneumonia and neonatal sepsis. Breastfeeding is when the infant is fed the milk made from the mother breasts. It is universally recognized that newborn and infant nutrition is the best, and yet it offers multiple health benefits for the mother and infant [9]. Breast milk is the correct mixture of nutrients needed by a baby to develop a body and brain, along with antibodies that shield your infant from infection and disease.

Globally studies have shown that targeted health messages have provided numerous advantages when it comes to improving breastfeeding practices among mothers, particularly those facing specific challenges such as those in rural or underserved communities [12], conducted a study on improving infant feeding practices in Shanghai, China, using short

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message service (SMS) technology. Feedback from participants indicated that the messages were helpful and easy to understand, leading to improvements in breastfeeding practices and overall infant feeding behaviors [13], states these messages can be delivered through various platforms such as counseling sessions, printed materials, social media, or community outreach, with the goal of empowering young mothers to adopt and maintain proper breastfeeding habits.

In Kenya, exclusive breastfeeding (EBF) rates have shown significant improvement over the years. According to the 2003 Kenya Demographic and Health Survey (KDHS), only 13% of infants under six months were exclusively breastfed. This figure rose to 32% in the 2008-09 KDHS and further increased to 61% by 2014. However, the practice of EBF tends to decline as infants age. For instance, while 84% of infants aged 0-1 month are exclusively breastfed, this percentage drops to 42% among those aged 4–5 months [5]. Despite these efforts, breastfeeding rates among teenage mothers remain lower than desired.

This study sought to bridge the gap by evaluating the effect of targeted health messages, identifying key factors that contribute to their success, and offering recommendations for the design and implementation among teenage mothers in Tharaka Nithi County.

METHODOLOGY

This study employed a randomize control trial design with pre- and post-intervention assessments to evaluate the effect of targeted health messages on breastfeeding practices among teenage mothers. The research was conducted in Tharaka Nithi County, Kenya, specifically Marimanti level 4 and Magutuni level 4 hospitals.

The study population consisted of teenage mothers with children below six months in these hospitals. Purposive sampling was used to sample 2 hospitals and simple random sampling to sample 60 teenage mothers.

Data collection was carried out using structured questionnaires and focused group discussion administered both before and after the intervention, covering areas such as knowledge, attitudes, sociocultural influences, and breastfeeding practices.

The intervention comprised targeted health messages based on the gaps on breastfeeding practices, focusing on importance of breastfeeding, exclusive breastfeeding, attitude and the ideal practices. The methods included discussions, posters, short messages and simulation exercises.

Questionnaires and Focused Group Discussion were used as data collection tools. Statistical Package for the Social Sciences (SPSS) was the software used for analysis with tables and figures being used to summarize the data. inferential statistics such as one way ANOVA, Chi square, and linear regression tests to examine changes and associations. A significance level of $p < 0.05$ was used to determine statistical significance.

RESULTS

1.0 Socio-Demographic Data of Respondents

The demographic profile provides information about the population structure and helps create a mental picture of the subgroups that exist in the overall population. Researchers obtain demographic information from the study subjects to understand sample characteristics and to determine if samples are representative of the populations of interest. Although demographic variables cannot be manipulated, researchers can explain relationships between them and dependent variables.

Table 1: Demographic Data of Respondents

Variable		Frequency (n)	Percentage (%)
Age (Years)	13-15 Years	7	14.3
	15-18 years	48	85.7
Level of Education	No education	6	10.7
	Primary	20	35.7
	High school	25	44.6
	College/University	5	8.9
Age of Baby (Months)	Below 2 Months	15	26.8
	3-4 Months	20	35.7
	5-6 Months	21	37.5

1.2 Baseline Knowledge on Breastfeeding Practices

A Chi-Square test was used to determine whether there were statistically significant differences in the distribution of responses before and after the breastfeeding knowledge intervention. The analysis was conducted for each of the seven items, comparing pretest and posttest response frequencies across the five Likert scale categories (Strongly Disagree to Strongly Agree). On the term Breastfeeding makes baby healthier, a $Chi^2 = 49.84$, $p < 0.001$ was obtained, giving the implication that There was a statistically significant shift in respondents' opinions after the intervention. Initially,

many disagreed or were neutral, but posttest responses showed a significant increase in agreement. This suggests the intervention successfully corrected misinformation or reinforced the benefits of breastfeeding. On the issue of Exclusive breastfeeding for 6 months, a $Chi^2 = 55.22$, $p < 0.001$was obtained. On the issue of breastfeeding being Good for mother's well-being, a $Chi^2 = 29.00$, $p < 0.001$ was obtained. This implied that initially, responses were more spread across the scale with notable levels of disagreement and neutrality. After the intervention, a substantial number shifted towards agreement. This implies that the respondents developed a better understanding of how breastfeeding benefits maternal health. On breastfeeding the First milk within one hour, a $Chi^2 = 42.88$, $p < 0.001$ was obtained. This implied that Pre-intervention data showed relatively low awareness of the importance of colostrum and early initiation. The posttest results demonstrated a strong improvement in understanding, with most respondents shifting to agreement. This indicates a successful change in knowledge regarding the timing of the first feed. On breastfeeding on demand vs schedule, a $Chi^2 = 25.08$, $p < 0.001$ was obtained, giving the indication that the significant change indicates that the intervention helped clarify misconceptions about infant feeding schedules. More respondents began to agree with feeding on demand as a recommended practice, aligning with WHO recommendations.

The one-way ANOVA evaluated variance between pretest and posttest means. The extremely high F-statistic (72.34) and very small p-value (0.000002) confirm that the intervention led to a statistically significant difference in responses across test phases. This supports linear regression analysis test results and further solidifies the conclusion that knowledge increased due to the intervention.

A simple linear regression was performed with Posttest WA as the dependent variable and Pretest WA as the independent variable. The regression model demonstrates a positive relationship between pretest and posttest knowledge scores. The Pretest WA coefficient (0.615) indicates that for every 1-point increase in pretest score, the posttest score increased by approximately 0.62 units. The significant p-values ($p < 0.05$) for both the intercept and slope confirm the model's reliability.

All three statistical methods confirm a significant improvement in breastfeeding knowledge post-intervention. The thematic areas with the highest posttest WA include "Exclusive breastfeeding for 6 months" (4.26) and "Harmful foods/drinks affect baby" (4.15), showing that the education component was most impactful in these domains. The improvement in "Providers give adequate info" (from 2.95 to 3.45) though smaller, still reflects progress, indicating areas needing additional focus for further gains.

Table 2: Change in knowledge level Pre and Post Intervention following Chi-Square Test.

Item	Chi^2 Statistic	p-value	Degrees of Freedom
Breastfeeding makes baby healthier	49.83602	0.001	4
Exclusive breastfeeding for 6 months	55.22408	0.001	4
Good for mothers' well-being	28.99885	0.001	4
First milk within one hour	42.87576	0.001	4
Feed on demand vs schedule	25.07683	0.001	4
Harmful foods/drinks affect baby	45.89836	0.001	4
Providers give adequate info	24.09886	0.001	4

The control group's baseline knowledge was quite similar to the experimental group, indicating comparable starting points. For instance, "Breastfeeding makes baby healthier" had a WA of 2.71, and "Exclusive breastfeeding for 6 months" had a WA of 3.00, both close to the experimental group's scores. A significant portion (27.3% SD, 18.2% D) also disagreed about "First milk within one hour". The highest weighted average in the control group's pre-test knowledge section was for "Providers give adequate info" (WA 3.43), suggesting that many felt they were receiving sufficient information.

After the pretest, the researcher administered the intervention to the Experimental group only, which included delivery of structured, evidence-based health messages to improve breastfeeding knowledge, attitudes, and practices among teenage mothers, following WHO and UNICEF guidelines. These messages were meant to address common challenges identified in the initial phase. Following the intervention (presumably targeted health messages), the experimental group demonstrated a substantial improvement in breastfeeding knowledge. Agreement and strong agreement percentages significantly increased across all statements, and weighted averages rose considerably. For example, "Breastfeeding makes baby healthier" saw a drastic shift, with 35.7% agreeing and 39.3% strongly agreeing (WA 3.99), compared to much lower figures in the pre-test. Similarly, for "Exclusive breastfeeding for 6 months," 33.9% agreed and 50.0% strongly agreed (WA 4.26). This indicates that the targeted health messages were highly effective in enhancing knowledge regarding breastfeeding benefits, practices, and duration. The statement "Exclusive breastfeeding for 6 months" had the highest weighted average (WA 4.26) in this section, demonstrating a strong understanding of this key recommendation.

Table 3: Change in knowledge level Pre and Post Intervention following ANOVA Test

Source	Sum of Squares	df	F	p-value
C(Test)	3.342	1	72.34	0.000002
Residual	0.554	12		

The one-way ANOVA evaluated variance between pretest and posttest means. The extremely high F-statistic (72.34) and very small p-value (0.000002) confirm that the intervention led to a statistically significant difference in responses across test phases. This supports the paired t-test results and further solidifies the conclusion that knowledge increased due to the intervention.

Table 4: Change in knowledge level Pre and Post Intervention following Linear Regression Analysis

Coefficient	Estimate	Std. Error	t-value	p-value
Intercept	2.2815	0.505	4.515	0.005
Pretest_WA	0.6151	0.163	3.783	0.010

1.3 DISCUSSION

Research done on knowledge of teenage mothers regarding breastfeeding has produced mixed results. Mother graduate of elementary school performed exclusive breastfeeding 1.167 times higher than mothers who never attended school [1]. Furthermore, there was 1.203 ratio of possibilities for mothers who graduated junior high school to practice exclusive breastfeeding over mothers without any formal education. The results using exclusive breastfeeding as the dependent variable showed that mothers who graduated from high school were 1.177 times more likely to perform exclusive breastfeeding than mothers without any educational records. The findings for this investigation also indicated that Mothers with tertiary education have 1.203 times more likely to practice exclusive breastfeeding compared to mothers who were never enrolled to school [1]. Previous studies have reported that the baseline knowledge of teenage mothers about breastfeeding practices in hospitals is equally at variance with the state of awareness and lacunae informed by varying experiences, social influences and education [2]. As a result, studies have proved that many adolescent mothers may possess some awareness regarding breastfeeding's importance but the knowledge regarding the practical aspects of breastfeeding, including exclusive breastfeeding for the first six months, correct latching ways, and the positive impact of breastfeeding in infant health and maternal health are missing or irregular [3, 4], suggest that for many, perhaps many do not realize the recommendation for breastfeeding and may hold misconceptions (e.g., formula is an equivalent to breastfeeding) [2], also identified factors that affected exclusive breastfeeding practices, which included education level, occupation, and support systems, such as guidance from healthcare professionals and family. Mothers with higher levels of education and access to healthcare services were more likely to practice EBF for the full six months. Conversely, mothers who lacked proper support or were influenced by cultural misconceptions tended to deviate from the EBF guidelines. Provision of comprehensive breastfeeding education during antenatal and postnatal visits increased the women's likelihood of initiating and continuing exclusive breastfeeding. On the other hand, women who had difficulty getting accurate information or had cultural and familial pressures to offer other foods or liquids before the recommended six months were more likely to do so [6]. The results reviewed availability of knowledge on breastfeeding practices is essential as it's likely to boost the breastfeeding practices of the teenage mothers. A comparison of the pretest and posttest results for both experimental and control groups showed that the outcome in breastfeeding practices is more effective after intervention, implying that availability of knowledge on breastfeeding practices enhances initiation, duration and frequency of breastfeeding practices that in the right position. This is in line with the available literature review which says that a teen mother's level of knowledge contributes to enhancement of the breastfeeding practices and that the health education offered during antenatal and postnatal visits boosts the initiation and consistency in exclusive breastfeeding practices. Therefore, targeted health messaging evidently serves as a suitable intervention towards improving breastfeeding practices as it yields positive and remarkable results.

1.4 CONCLUSION

The study found that baseline knowledge levels on breastfeeding practices among teenage mothers in public hospitals in Tharaka Nithi County were generally insufficient. Many respondents showed limited understanding of key concepts such as exclusive breastfeeding for six months, early initiation of breastfeeding, and the health benefits of breastfeeding for both mother and baby. This was evident from the low pretest weighted averages and the prevalence of neutral or disagree responses across several knowledge indicators. The findings point to a clear gap in early maternal education and emphasize the need for targeted, adolescent-friendly breastfeeding awareness programs within hospital settings to ensure that young mothers are equipped with the essential knowledge needed for optimal infant care.

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1.6 DECLARATIONS

Funding: The researcher used his own money in funding all the research activities and resources.

Conflict of Interest: There are no conflicts of interest.

Ethical approval: Ethical approval was obtained from Chuka University Research Ethics and Review Committee

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