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Impact of Educational Interventions on Lactating Mothers' Breastfeeding Knowledge, Myths, and Nutritional Practices

Ms. Tanvi Parab[1], Dr. Rajeshree Shinde[2]
[1]*Sir Vithaldas Thackersey College of Home Science (Autonomous), SNDT Women's University, Juhu, Mumbai*
[2]*Sir Vithaldas Thackersey College of Home Science (Autonomous), SNDTWU, Juhu, Mumbai-49*

Abstract: ***Breastfeeding provides optimal nutrition and immune protection for infants, yet many mothers in India face challenges such as inadequate knowledge, cultural myths, and poor nutritional practices, resulting in suboptimal exclusive breastfeeding rates. This study evaluated the impact of pamphlet-based educational interventions on breastfeeding knowledge, myths, and nutritional practices among lactating mothers. A quasi-experimental pre–post design was employed among 100 lactating mothers from Mumbai and Pune, recruited using purposive sampling. A structured questionnaire assessed knowledge, attitude, and practice (KAP) regarding breastfeeding and maternal nutrition. A culturally adapted pamphlet-based educational session was delivered offline at Anganwadi centers in Mumbai and online via video calls in Pune. Post-intervention, the same tool was administered. Data were analyzed using descriptive statistics, paired t-tests, chi-square tests, and ANOVA. Mean knowledge scores increased significantly from 10.68 ± 2.14 to 13.14 ± 1.31 ($p < 0.001$); attitude scores improved from 15.58 ± 3.32 to 17.88 ± 1.65 ($p < 0.001$); and practice scores increased slightly from 7.45 ± 1.90 to 7.81 ± 1.85 ($p = 0.176$). Total KAP improved from 33.71 ± 6.16 to 38.83 ± 3.98 ($p < 0.001$). ANOVA revealed no significant parity association pre-intervention, but significant differences were observed post-intervention ($p < 0.05$), with primiparous mothers showing greater improvements. Pamphlet-based interventions significantly enhanced knowledge and attitudes and corrected myths; although practice improvements were not statistically significant, positive trends were evident. Integrating such low-cost interventions into maternal health services may help bridge breastfeeding knowledge gaps and improve maternal nutrition.***

I. INTRODUCTION

Breastfeeding is widely recognized as the most natural and beneficial form of infant nutrition, providing complete macronutrients, micronutrients, and immune protection to support optimal growth and development. It fosters mother–infant bonding and reduces maternal risks of postpartum complications, diabetes, and certain cancers. Global health authorities, including the World Health Organization (WHO) and UNICEF, recommend early initiation of breastfeeding within one hour of birth, exclusive breastfeeding for six months, and continued breastfeeding with complementary feeding up to two years or beyond. Despite these recommendations, suboptimal breastfeeding practices persist in India. Data from the National Family Health Survey (NFHS-5) highlight gaps in exclusive breastfeeding rates, which remain below WHO targets. Contributing factors include cracked nipples, breast engorgement, perceived insufficient milk supply, and inadequate maternal diet. Deep-rooted cultural myths, such as discarding colostrum or supplementing infants with honey or water, further compromise feeding practices. Nutritional needs during lactation increase by approximately 400–500 kcal/day with emphasis on micronutrients like calcium, iron, vitamin D, and omega-3 fatty acids. However, knowledge gaps and dietary misconceptions among lactating mothers remain prevalent. Addressing these gaps through culturally sensitive education is essential to improve maternal and infant health outcomes. This study aimed to evaluate the effectiveness of pamphlet-based educational interventions on breastfeeding knowledge, myths, and nutritional practices among lactating mothers residing in urban and semi-urban communities of Mumbai and Pune.

II. METHODOLOGY

This quasi-experimental pre–post study was conducted among lactating mothers from Mumbai and Pune to evaluate changes in breastfeeding-related knowledge, attitude, and practice following an educational intervention. A total of 100 mothers within six months postpartum were recruited using purposive sampling. Participants were enrolled through the Foundation for Mother and Child Health (FMCH) in Mumbai and via online lactation support groups in Pune.

The inclusion criteria were lactating mothers who were six months postpartum or less, residing in the study locations, and willing to participate; the exclusion criteria were pregnant women, non-breastfeeding mothers, exclusive formula feeders, and those residing outside Mumbai or Pune. Ethical approval for the study was obtained from the Inter System Biomedica Ethics Committee (ISBEC), and written informed consent was obtained from all participants.

The intervention consisted of a culturally relevant pamphlet-based educational session covering several key topics, namely breastfeeding techniques (including correct latching and positioning), the importance of colostrum, appropriate feeding frequency and recognition of hunger cues, clarification of myths such as breast size determining milk production, and maternal nutrition during lactation with emphasis on traditional foods and dietary diversity. Pamphlets were provided in printed form for offline sessions at Anganwadi centers in Mumbai and in digital format for online sessions conducted via video calls in Pune. A structured questionnaire was administered before and after the intervention to assess demographic characteristics and knowledge, attitude, and practice domains. Data were analyzed using SPSS v20, applying descriptive statistics to summarize baseline characteristics, paired t-tests to evaluate changes in KAP scores, chi-square tests to examine categorical associations, and one-way ANOVA to explore the effect of parity on outcomes.

A. Knowledge, Attitude and Practice Analysis

TABLE 1: Pre-KAP Scores of the Study Participants

Scoring	Minimum Score	Maximum Score	Range	Percentage
Knowledge score	0	14	0-14	76%
Attitude score	0	19	0-19	82%
Practice score	0	10	0-10	75%
Total Knowledge, Attitude and Practice (KAP) score	0	43	0-43	78%

The Knowledge, Attitude and Practice scores was categorised as Poor KAP (<50%), Fair KAP (50-74%), Good KAP (≥75%)

B. The total KAP score was categorised as Poor KAP (0 – 21), Fair KAP (22 – 32), Good KAP (33 – 43) scores.

Prior to the educational session, the combined KAP score was 78%, placing participants in the “good” category. Knowledge (76%) and practice (75%) scores revealed moderate understanding and implementation of breastfeeding techniques, with common gaps seen in areas like colostrum use, exclusive breastfeeding duration, and positioning. Attitude scores were higher (82%), showing overall positive perceptions but with residual cultural hesitations and myths. These findings highlighted the need for structured, evidence-based education to address misconceptions and improve consistent practices.

TABLE 2: Post-KAP Scores of the Study Participants

Scoring	Minimum Score	Maximum Score	Range	Percentage
Knowledge score	0	14	0-14	94%
Attitude score	0	19	0-19	94%
Practice score	0	10	0-10	78%
Total Knowledge, Attitude and Practice (KAP) score	0	43	0-43	90 %

The Knowledge, Attitude and Practice scores was categorised as Poor KAP (<50%), Fair KAP (50-74%), Good KAP (≥75%)

C. The total KAP score was categorised as Poor KAP (0 – 21), Fair KAP (22 – 32), Good KAP (33 – 43) scores.

Following the intervention, the overall KAP score improved to 90%, firmly within the “good” category. Knowledge and attitude showed marked increases to 94%, reflecting enhanced understanding of breastfeeding benefits and stronger positive perceptions. Practice scores rose to 78%, indicating gradual improvement in behavioral adoption, though changes were less pronounced compared to knowledge and attitude. This outcome demonstrates the effectiveness of the educational intervention and suggests that behavioral reinforcement over time could further enhance practical application.

III. RESULTS

Participants were predominantly aged between 21 and 30 years, with most belonging to Hindu households and middle-income families. Fifty-five percent were first-time mothers, and the majority reported institutional deliveries. Healthcare professionals were identified as the primary source of breastfeeding knowledge (52%), followed by family elders (30%), peers (10%), and media (8%).

Table 3: Socio-demographic Characteristics of Participants (n = 100)

Characteristic	Category	n (%)
Age (years)	≤ 20	15 (15)
	21–30	70 (70)
	> 30	15 (15)
Religion	Hindu	78 (78)
	Muslim	15 (15)
	Christian/Other	7 (7)
Parity	Primiparous	55 (55)
	Multiparous	45 (45)
Monthly Family Income	< ₹20,000	20 (20)
	₹20,000–40,000	60 (60)
	> ₹40,000	20 (20)
Source of Breastfeeding Knowledge	Healthcare professionals	52 (52)
	Family elders	30 (30)
	Peers	10 (10)
	Media (TV/social media)	8 (8)

Knowledge scores increased significantly from 10.68 ± 2.14 to 13.14 ± 1.31 ($p < 0.001$), with notable improvements in awareness of breastfeeding benefits such as immunity enhancement and the importance of colostrum. Attitude scores rose from 15.58 ± 3.32 to 17.88 ± 1.65 ($p < 0.001$), indicating reduced belief in myths and greater acceptance of maternal nutritional needs. Practice scores increased from 7.45 ± 1.90 to 7.81 ± 1.85, which was not statistically significant ($p = 0.176$), but positive trends were noted, including reduced prelacteal feeding and improved maternal dietary diversity. Total KAP scores improved significantly from 33.71 ± 6.16 to 38.83 ± 3.98 ($p < 0.001$).

Table 4: Comparison of Pre- and Post-Intervention KAP Scores

Domain	Pre-intervention (Mean ± SD)	Post-intervention (Mean ± SD)	p-value
Knowledge	10.68 ± 2.14	13.14 ± 1.31	<0.001

Attitude	15.58 ± 3.32	17.88 ± 1.65	<0.001
Practice	7.45 ± 1.90	7.81 ± 1.85	0.176
Total KAP	33.71 ± 6.16	38.83 ± 3.98	<0.001

ANOVA results showed no significant parity association with pre-intervention KAP scores; however, significant differences were observed post-intervention ($p < 0.05$), with primiparous mothers exhibiting greater improvements compared to multiparous mothers.

IV. DISCUSSION

This study demonstrates that a single, low-cost pamphlet-based educational intervention can significantly enhance maternal knowledge and attitudes regarding breastfeeding and nutrition while effectively addressing myths and misconceptions. Although changes in reported practices were not statistically significant, the positive trends observed suggest potential for further improvement with sustained reinforcement. Similar findings have been reported in earlier studies, where structured educational and counseling interventions increased exclusive breastfeeding rates and improved maternal self-efficacy (McFadden et al., 2017; Bhandari et al., 2003). The myth-busting component of this study is particularly relevant; misconceptions about discarding colostrum, supplementing newborns with water, or assuming breast size influences milk output are widely prevalent and have been documented in Indian and global contexts. Correcting these beliefs has been shown to improve early initiation and continuation of breastfeeding (Khresheh et al., 2011; Patel et al., 2020). Nutritional counseling provided to mothers in this study addressed important dietary gaps during lactation, aligning with evidence that maternal diet quality influences breast milk micronutrient content and infant health outcomes (Bravi et al., 2016; Koletzko et al., 2019).

The parity findings are also noteworthy: first-time mothers benefitted more from the intervention, consistent with literature suggesting that multiparous women often rely on prior experience and may not seek updated guidance (Ventura et al., 2017). This indicates that targeted interventions for primiparous mothers, possibly initiated antenatally, could maximize impact. Incorporating culturally tailored, low-cost interventions like pamphlets into maternal health programs delivered through Anganwadi centers and primary health facilities could bridge persistent gaps in breastfeeding knowledge, correct harmful myths, and improve maternal nutritional practices, thereby contributing to improved infant feeding outcomes.

V. CONCLUSION

Pamphlet-based educational interventions are practical, culturally appropriate, and effective in improving breastfeeding knowledge and attitudes while reducing harmful myths among lactating mothers. Although behavioral practices showed only modest improvement, the observed trends indicate potential for sustained change with ongoing support and family involvement. Incorporating these low-cost strategies into routine maternal healthcare can bridge existing gaps in breastfeeding practices and maternal nutrition, contributing to improved maternal and child health outcomes.

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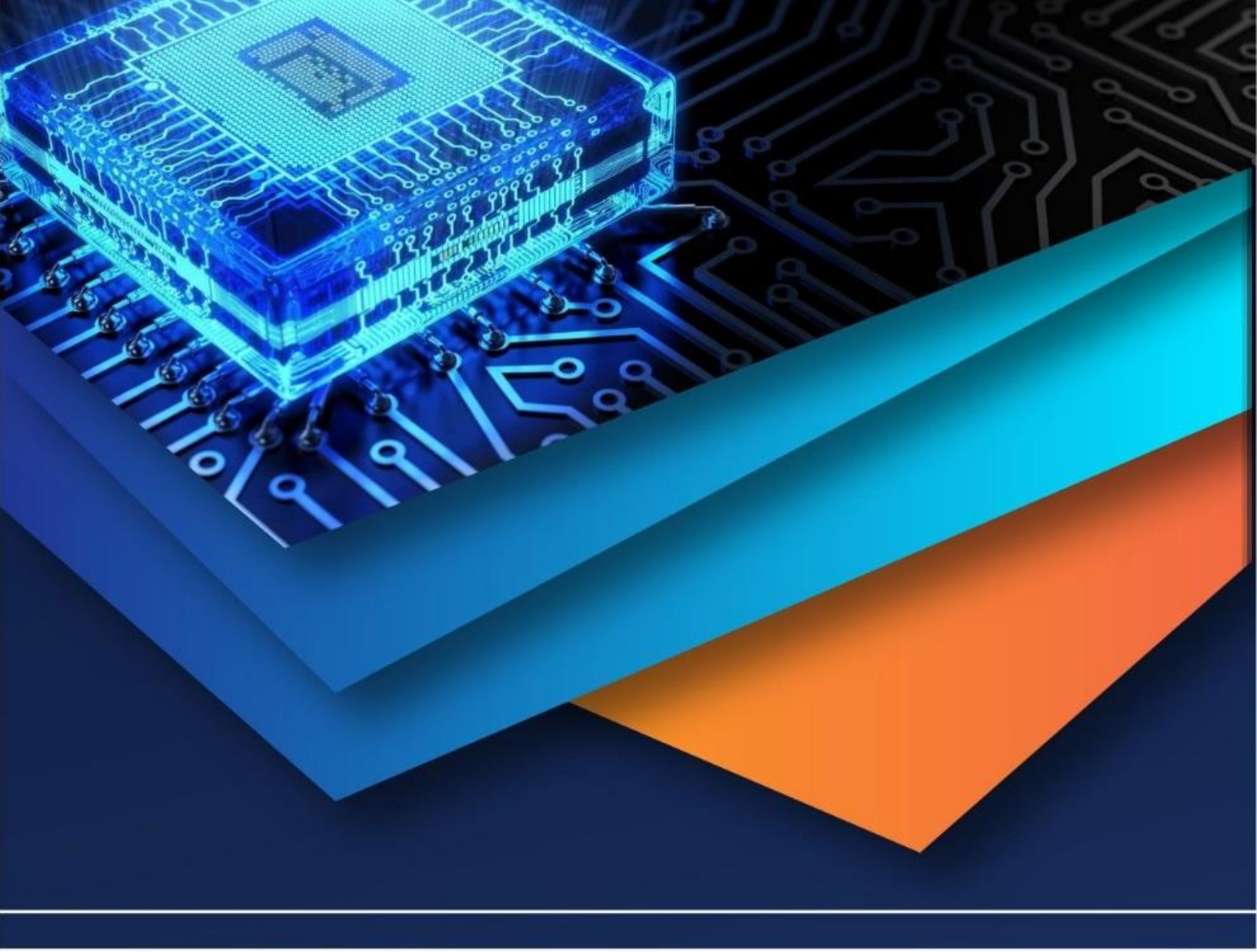

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