

The Effect of Moringa Leaf Nutrition Education Using Leaflet Media on the Knowledge Level of Breastfeeding Mothers at Puskesmas Buaran

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Abstract :

Adequate maternal nutrition during lactation is essential for ensuring optimal breast milk production and quality. Moringa leaves (*Moringa oleifera*) are a rich local source of galactagogues, iron, and essential nutrients, yet community knowledge regarding their nutritional benefits remains suboptimal. Educational interventions using visual media, such as leaflets, provide an accessible method to enhance health literacy among breastfeeding mothers. Objective: This study aimed to determine the effect of Moringa leaf nutrition education using leaflet media on the knowledge level of breastfeeding mothers at Puskesmas Buaran. Method: This study employed a pre-experimental design utilizing a one-group pretest-posttest approach. The population consisted of breastfeeding mothers in the working area of Puskesmas Buaran, with a sample of 96 respondents selected via purposive sampling. Data were collected using a validated structured questionnaire administered before and after the educational intervention. Univariate and bivariate analyses were conducted using the Wilcoxon signed-rank test in SPSS. Results and Discussion: The results demonstrated a substantial increase in maternal knowledge scores following the intervention. The mean knowledge score improved from a pre-test baseline of 68.06 to a post-test score of 93.87. Statistical analysis using the Wilcoxon signed-rank test yielded a p-value of 0.001 ($p < 0.05$), confirming a statistically significant effect of the nutrition education intervention. The improvement highlights the effectiveness of using leaflet media as a structured visual aid that reinforces health communication, facilitates information retention, and successfully empowers breastfeeding mothers with practical knowledge regarding nutritional management and galactagogue utilization. Conclusion: Moringa leaf nutrition education utilizing leaflet media significantly improves the knowledge level of breastfeeding mothers at Puskesmas Buaran. Health services are encouraged to integrate visual educational tools into routine postpartum care to optimize maternal nutritional practices and lactation support.

Keywords: Breastfeeding Mothers, Leaflet Media, Moringa Leaves, Nutrition Education, Knowledge Level, Puskesmas Buaran

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Introduction

Maternal nutrition during the postpartum and lactation periods plays a critical role in determining both maternal recovery and infant development. Exclusive breastfeeding is globally recommended for the first six months of life, yet its success heavily depends on maternal nutritional status and milk production. Insufficient milk supply is frequently reported as a primary cause of early breastfeeding cessation. Consequently, optimizing lactation through affordable and culturally acceptable dietary interventions is a major priority in public health and midwifery practice.

Moringa oleifera, commonly known as Moringa leaves or kelor, has gained widespread recognition as a functional superfood rich in macro- and micronutrients, including calcium, iron, vitamin C, beta-carotene, and essential amino acids. Furthermore, Moringa leaves possess documented galactagogue properties due to their phytochemical constituents, such as flavonoids, phytosterols, and alkaloids, which stimulate prolactin and oxytocin activity. Despite these exceptional nutritional and galactagogue benefits, rural and semi-urban communities often lack comprehensive understanding regarding the proper utilization and processing of Moringa leaves for lactation support.

Health education is an essential strategy to bridge this knowledge gap. Effective health communication requires appropriate medium selection to maximize audience engagement and comprehension. Print-based visual media, particularly leaflets, remain universally accepted and highly effective tools in public health interventions. Leaflets provide concise, portable, and detailed information that enables mothers to review educational content independently at home.

Previous studies emphasize that structured visual media significantly enhance cognitive retention and health literacy compared to verbal counseling alone. This study focuses on the working area of Puskesmas Buaran, where community health initiatives continuously strive to improve maternal and child health outcomes. Although local health programs exist, targeted evaluations regarding nutritional education interventions focusing on local galactagogues remain limited. Therefore, this study aimed to evaluate the effect of Moringa leaf nutrition education using leaflet media on the knowledge level of breastfeeding mothers at Puskesmas Buaran, providing evidence-based insights to support enhanced postpartum health education.

Method

This study utilized a quantitative pre-experimental design with a one-group pretest-posttest approach. The research was conducted in the working area of Puskesmas Buaran. The target population comprised all breastfeeding mothers residing within the region. A total sample of 96 respondents was recruited using purposive sampling based on specific inclusion criteria, which included mothers actively breastfeeding infants aged 0-12 months who possessed no severe cognitive or reading barriers and consented to participate in the study.

The primary research instrument was a validated structured questionnaire designed to assess maternal knowledge regarding the nutritional composition, galactagogue benefits, and safe preparation methods of Moringa leaves. Data collection occurred in sequential phases: an initial pre-test was administered to evaluate baseline knowledge, followed immediately by a structured educational intervention utilizing illustrated leaflets detailing Moringa leaf benefits. A post-test using the identical questionnaire was administered following the intervention to measure knowledge acquisition.

Data management procedures encompassed editing, coding, data entry, cleaning, and tabulation. Given that the normality test indicated non-parametric data distribution, bivariate analysis was performed using the Wilcoxon signed-rank test via IBM SPSS Statistics to determine the statistical significance of the pre- and post-intervention score differences. Ethical clearance and institutional approvals were secured prior to field implementation, ensuring adherence to ethical standards of confidentiality, informed consent, and beneficence.

Results and Discussion

The educational intervention delivered to the 96 breastfeeding mothers yielded clear quantitative improvements in cognitive awareness regarding Moringa leaf utilization. The outcomes of the pre-test and post-test measurements reflect substantial educational impact across the participant cohort.

Table 1. Comparison of Maternal Knowledge Scores Before and After Nutrition Education

Knowledge category	Pre-Test (n)	Pre-Test (%)	Post-Test (n)	Post-Test (%)
Good (80-100)	12	12.5%	89	92.7%
Moderate (60-79)	54	56.2%	7	7.3%
Poor (<60)	30	31.3%	0	0.0%
Total	96	100.0%	96	100.0%

As detailed in Table 1, baseline measurements prior to the intervention demonstrated that the majority of respondents possessed moderate (56.2%) or poor (31.3%) knowledge levels, with only 12.5% exhibiting good knowledge. Following the distribution of leaflets and structured counseling sessions regarding Moringa leaves, the post-test distribution shifted dramatically: 92.7% of respondents achieved a good knowledge category, and none remained in the poor category. The overall mean knowledge score increased markedly from 68.06 during the pre-test to 93.87 during the post-test.

Bivariate analysis utilizing the Wilcoxon signed-rank test yielded a calculated p-value of 0.001. Because the p-value is substantially lower than the significance threshold ($p < 0.05$), the null hypothesis is rejected, conclusively confirming that Moringa leaf nutrition education using leaflet media has a statistically significant effect on improving the knowledge level of breastfeeding mothers.

The findings validate that visual educational media such as leaflets are highly effective in transferring complex nutritional information into digestible formats. Leaflets allow mothers to repeatedly review key concepts concerning micronutrient density, safe preparation routines, and galactagogue mechanisms. These results align with broader public health communication theories indicating that visual reinforcements combined with structured instruction significantly boost cognitive retention among postpartum women. Furthermore, utilizing locally abundant resources like Moringa leaves empowers mothers to cost-effectively resolve lactation challenges, thereby supporting sustainable maternal and child health goals.

Conclusion

This study investigated the effect of Moringa leaf nutrition education using leaflet media on the knowledge level of breastfeeding mothers at Puskesmas Buaran. The empirical findings demonstrate a statistically significant improvement in maternal knowledge, with mean scores increasing from 68.06 to 93.87 and a Wilcoxon test p-value of 0.001. The deployment of leaflet media successfully overcame baseline information gaps by providing clear, accessible, and structured guidance on the nutritional and galactagogue benefits of Moringa leaves. These findings provide robust baseline evidence for midwifery practice and community health program development. Integrating structured visual media into routine antenatal and postpartum care can vastly improve health literacy and nutritional self-reliance among breastfeeding mothers. Future investigations should expand upon these insights by incorporating broader longitudinal tracking, larger multi-center cohorts, and nutritional biomarker assessments to comprehensively evaluate the sustained impact of local galactagogue education on infant growth milestones and exclusive breastfeeding duration.

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