


Impact of Video Education on Mothers' Knowledge of Early Initiation of Breastfeeding in Makassar

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Article Info	ABSTRACT
Keywords: video education, early initiation of breastfeeding, maternal knowledge, antenatal education.	Early Initiation of Breastfeeding (IMD) is a critical intervention for improving maternal and neonatal health outcomes. However, maternal knowledge regarding IMD remains inconsistent, particularly in urban settings. This study aimed to examine the effect of video-based education on pregnant women's knowledge of IMD in Makassar City. This study employed a quasi experimental one-group pretest-posttest design, involving 35 third-trimester pregnant women selected through purposive sampling. Data were collected using a 20-item IMD knowledge questionnaire. The intervention consisted of an educational video on IMD, with knowledge assessed before and after viewing. The results indicated a significant improvement in maternal knowledge, with mean scores increasing from 11.14 to 16.57. A paired <i>t</i> -test revealed $t = 14.82$ and $p = 0.000$ ($p < 0.05$), confirming that video-based education has a significant effect on enhancing knowledge. The study concludes that educational videos are an effective, engaging, and accessible medium for strengthening maternal understanding of IMD and may serve as an evidence-based strategy for antenatal education in healthcare facilities.
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INTRODUCTION

Immediate breastfeeding (IMD) represents a critical intervention that supports neonatal survival and maternal health, particularly within the first hour after birth (Istiqomah & Amalia, 2023). IMD serves as an essential initial step for successful breastfeeding, as it allows newborns to receive colostrum rich in antibodies (World Health Organization, 2021). This practice has been shown to prevent approximately 22% of neonatal deaths, enhance the infant's immune system through colostrum, stabilize body temperature, accelerate uterine involution, and strengthen maternal-infant bonding (Abimulyani & Mariati, 2025; Rifat et al., 2025). Colostrum obtained during IMD functions as the newborn's first immunization due to its high antibody content (Sukaisi & Sabrina, 2024). Despite its importance, IMD implementation in many countries remains suboptimal, especially in middle-income regions.

Limited maternal knowledge is frequently cited as a key barrier to successful IMD practices (Takahashi et al., 2017).

In Indonesia, the coverage of IMD has fluctuated over the years, as reported in the National Health Profile (Ministry of Health, Republic of Indonesia, 2022). The national IMD coverage is approximately 58.2%, reflecting a persistent gap between national policies and actual implementation in the field. Factors influencing IMD success include maternal knowledge, psychological readiness, and support from healthcare providers (Abimulyani & Mariati, 2025; Abdulahi et al., 2021). Regional disparities in coverage indicate inconsistencies in educational programs and support systems for mothers. Sociocultural factors, educational attainment, and health literacy further contribute to these variations (Tawfiq et al., 2025; Istiqomah & Amalia, 2023; Acharya & Khanal, 2015). Although the government has promoted IMD through prenatal classes and routine counseling, the delivery methods often remain conventional. Monotonous face-to-face sessions may reduce maternal engagement and hinder comprehensive understanding. This situation highlights the need for more creative, interactive, and systematic educational strategies.

Makassar City, as an urban area, is characterized by a heterogeneous population and relatively good access to health services. However, reports from the local Health Office indicate that IMD practice in Makassar has yet to reach the desired target (Makassar City Health Office, 2022). Many mothers still lack a clear understanding of the benefits and procedures of IMD, resulting in variation in implementation across healthcare facilities. Differences in educational level and cultural practices also contribute to these gaps (Beyene et al., 2025; Admasu et al., 2022). Moreover, some healthcare facilities have not yet adopted modern educational media to support IMD counseling. These conditions underscore the need for educational strategies that can more effectively reach mothers from diverse backgrounds.

Maternal knowledge of early initiation of breastfeeding (IMD) is a crucial factor influencing a mother's preparedness and decision to practice IMD after childbirth. Mothers with adequate knowledge have been shown to be more confident and consistent in performing IMD (UNICEF, 2020). Conversely, limited understanding may hinder IMD implementation even when healthcare facilities fully support the procedure. Several studies have found that enhancing knowledge through antenatal education increases IMD success. Knowledge also serves as a fundamental basis for developing positive attitudes toward exclusive breastfeeding. Therefore, educational interventions prior to childbirth constitute an essential component in preparing mothers for optimal delivery outcomes.

Video-based educational media have emerged as an attractive and easily comprehensible alternative for health promotion (Seyyedi et al., 2021). Videos combine visual, auditory, and narrative elements capable of explaining IMD concepts clearly and concretely (Nguyen et al., 2021). Video- or virtual-based educational interventions significantly improve maternal knowledge and IMD success compared to conventional methods (Romani et al., 2022). Access to digital media such as videos and mobile applications is also associated with improved IMD practices, particularly in urban communities (Tawfiq et al., 2025). Videos enhance attention and information retention and are easily accessible, as mothers can rewatch them as needed. With the increasing adoption of digital technology in urban areas

such as Makassar, video-based education has become increasingly relevant. Consequently, video media have the potential to substantially improve maternal knowledge compared to traditional methods (Seyyedi et al., 2021).

Although numerous studies have evaluated the effectiveness of video-based health education, research specifically examining video education on IMD remains relatively limited (Sukaisi & Safrina, 2024). Many existing studies were conducted in regions with sociocultural contexts different from that of Makassar, limiting the generalizability of their findings. This situation indicates the need for research within the local context to ensure relevance. Furthermore, few studies have assessed changes in maternal knowledge scores before and after watching IMD educational videos. This gap in the literature highlights the need for empirical investigations. The present study seeks to address this research gap.

Based on this background, the objective of the current study is to analyze the effect of video-based education on improving maternal knowledge regarding IMD in Makassar City. This study measures differences in maternal knowledge scores before and after receiving the video intervention. The findings are expected to provide recommendations for community health centers and healthcare professionals in developing more effective educational media. Additionally, the results may support the optimization of national programs on IMD and exclusive breastfeeding. The use of video as an educational tool may serve as an innovative strategy for improving maternal and neonatal health services. Thus, this study offers a significant contribution to the development of evidence-based midwifery practices in Makassar.

METHODS

Research Design

This study employed a quantitative quasi experimental research design using a one-group pretest–posttest approach. This design was selected to evaluate changes in maternal knowledge regarding Early Initiation of Breastfeeding (IMD) before and after exposure to a video-based educational intervention, without the use of a control group. The design allows for the assessment of the immediate effect of the intervention by comparing participants' knowledge scores prior to and following the educational session.

Research Sample

This study involved pregnant women registered as antenatal care participants at several community health centers (puskesmas) in Makassar City. A purposive sampling technique was employed, with inclusion criteria consisting of: third-trimester pregnant women, the ability to communicate effectively, willingness to participate in the video-based educational intervention, and willingness to complete both pre- and post-intervention questionnaires. Women with a history of severe obstetric complications or medical conditions that could impede normal delivery were excluded. The final sample consisted of 35 pregnant women aged 20–35 years.

Research Instruments

The primary instrument of this study was a knowledge questionnaire on Early Initiation of Breastfeeding (IMD), developed by the researchers based on WHO guidelines and relevant

literature on IMD practices. The questionnaire covered aspects such as the definition of IMD, its benefits, implementation procedures, and success factors. It consisted of 20 multiple-choice items scored as 1 for correct and 0 for incorrect answers.

Content validity was assessed using the Content Validity Ratio (CVR) through expert judgment. The evaluation involved three senior midwifery lecturers and one clinical practitioner to ensure the clarity, relevance, and appropriateness of each questionnaire item. The results indicated that all items met the validity criteria, with CVR values greater than 0.000, confirming that all items were considered valid. The reliability test demonstrated that the instrument was reliable, with a Cronbach's alpha coefficient of 0.73, indicating acceptable internal consistency for measuring maternal knowledge of Early Initiation of Breastfeeding (IMD).

In addition, an educational video on IMD served as the intervention intended to enhance participants' knowledge. The video included visual explanations and narration on the concept, benefits, and procedural steps of IMD.

Data Collection

Data collection was conducted in two phases: before and after the intervention. Initially, a pre-test questionnaire was administered to all participants to assess baseline knowledge regarding IMD. Following this, participants received the intervention in the form of a structured viewing of the IMD educational video in a designated counseling room at the health centers. All participants were instructed to watch the video in its entirety without interruption. After the educational session concluded, a post-test questionnaire was distributed to measure changes in knowledge. Data collection was carried out by the researchers with assistance from trained health personnel at the participating health centers.

Data Analysis

Data were analyzed using descriptive and inferential statistical approaches. Descriptive statistics were used to describe respondent characteristics and pre- and post-intervention knowledge scores. To assess the effectiveness of the video intervention in improving knowledge, a paired sample t-test was employed. All analyses were performed at a significance level of 0.05. Results were interpreted to determine changes in knowledge scores and the effectiveness of video-based education as a medium for promoting IMD.

RESULTS AND DISCUSSION

Results

Overview of Respondents

This study involved 35 pregnant women who participated in antenatal education classes at several community health centers in Makassar City. All participants met the inclusion criteria and successfully completed both the pretest and posttest assessments. The mean age of the respondents was 27.8 years, with an age range of 20 to 35 years, indicating that most were within the active reproductive age group.

In terms of educational background, the majority had completed senior high school or an equivalent level (18 participants; 51.4%), followed by those with a diploma degree (9 participants; 25.7%) and a bachelor's degree (8 participants; 22.9%). Based on pregnancy

status, the distribution was nearly balanced between primigravida mothers (17 participants; 48.6%) and multigravida mothers (18 participants; 51.4%), suggesting that both first-time and experienced pregnant women were proportionally represented in this study.

Normality Test

A normality test was conducted to determine whether the knowledge score data before and after the video-based educational intervention were normally distributed, thereby allowing the use of parametric statistical analysis. Given that the sample size in this study was 35 respondents, the Shapiro–Wilk test was employed, as it is recommended for samples of fewer than 50 and is known for its high sensitivity in detecting data distribution patterns. Table 1 below presents the results of the normality test:

Table 1. Normality test

Data	Shapiro-Wilk		
	Statistics	df	Sig.
Pre-Test	0.964	35	.278
Post-Test	0.972	35	.421

The results of the normality test in Table 1 indicate that both the pretest and posttest knowledge scores have significance values greater than 0.05. This finding suggests that both datasets are normally distributed and show no significant deviation from the normal distribution curve. In other words, the distribution of maternal knowledge scores before and after viewing the educational video follows a reasonable pattern, thus meeting the assumptions required for further analysis using the paired t-test.

Hypothesis Testing

Hypothesis testing was conducted to determine whether there was a significant difference between the knowledge scores of pregnant women before and after receiving a video-based educational intervention on Early Initiation of Breastfeeding (IMD). Since the normality test confirmed that the data were normally distributed, the analysis proceeded with a paired t-test. This test evaluates differences between two measurements obtained from the same subjects, namely the pretest and posttest scores of participants who received the educational intervention.

The analysis revealed a clear increase in knowledge following the intervention. The mean pretest score was 11.14, while the mean posttest score increased to 16.57. This mean difference of 5.43 points indicates a substantial improvement in maternal understanding of IMD after viewing the educational video. Statistically, the paired t-test produced a t-value of 14.82 and a p-value of 0.000 ($p < 0.05$). This very small p-value indicates that the difference between pretest and posttest scores is statistically significant. The 95% confidence interval ranged from 4.63 to 6.24, confirming that the observed improvement occurred within a stable margin and was not due to chance.

Thus, the findings indicate that video-based education has a significant effect on improving pregnant women’s knowledge of Early Initiation of Breastfeeding. These results support previous research suggesting that audiovisual media are effective educational tools for enhancing maternal preparedness for breastfeeding practices.

Discussion

The findings of this study demonstrate that the use of educational videos has a significant effect on improving pregnant women's knowledge regarding Early Initiation of Breastfeeding (IMD). The increase from pretest to posttest scores indicates that respondents were able to understand the material presented through audiovisual media. Video-based education offers a more concrete learning experience by clearly visualizing the sequential steps of IMD. This aligns with multimedia learning theory, which posits that the combination of visual and auditory inputs enhances information retention and cognitive understanding. Through video, mothers can comprehend IMD concepts without relying on variations in explanations provided by healthcare workers. The consistency of audiovisual content further ensures uniform delivery of educational material to all participants. Therefore, video-based interventions are suitable as a routine educational method in antenatal classes.

These findings correspond to the literature emphasizing IMD as a crucial intervention within the first hour of life. IMD has been shown to reduce neonatal mortality, stabilize infant body temperature, and strengthen maternal–infant bonding (Abimulyani & Mariati, 2025; Rifat et al., 2025). Knowledge of these benefits enhances mothers' understanding of the urgency of performing IMD immediately after childbirth. Educational videos help clarify the advantages of colostrum and skin-to-skin contact, thereby motivating mothers to engage in IMD even after a challenging labor process. The use of narration and visual illustrations makes previously abstract concepts more understandable, forming the foundation for positive postpartum behavior. Accordingly, video-based educational media play a crucial role in strengthening maternal health education.

Low maternal knowledge is widely recognized as a major barrier to IMD implementation in many middle-income countries. Prior studies report that delays in IMD are often caused by a lack of information regarding its benefits and procedural steps (Takahashi et al., 2017). This study demonstrates that pregnant women can enhance their understanding through appropriately delivered education, particularly via digital media. After watching the educational video, mothers showed improved comprehension of IMD stages, including the importance of skin-to-skin contact. This indicates that video-based learning can bridge the limitations of conventional education, which typically relies solely on lectures. The improvement in knowledge scores suggests that video interventions may enhance IMD practices in real settings. As such, video education is an effective solution for addressing informational gaps.

This study also supports UNICEF's findings (2020), which highlight maternal knowledge as a key predictor of IMD success and exclusive breastfeeding. With improved knowledge, mothers become more confident and better prepared to participate actively in IMD following childbirth. Such confidence is especially crucial when healthcare personnel do not provide optimal guidance. Video-based education enables mothers to learn independently without relying entirely on explanations from health providers. Increased knowledge also empowers mothers to understand their rights and request IMD implementation. Moreover, providing education during pregnancy allows time for psychological preparation. Therefore, video-based educational interventions make a meaningful contribution to the success of IMD.

The results of this study are consistent with international research evaluating the effectiveness of digital interventions on maternal knowledge. Seyyedi et al. (2021) found that smartphone-based education significantly improved breastfeeding knowledge and practices. Similarly, Romani et al. (2022) reported that virtual education is more effective than traditional face-to-face methods in enhancing maternal readiness for IMD. This consistency reinforces the effectiveness of digital media across cultural and contextual settings. In this study, mothers showed strong interest in the video, reflected in the improved posttest scores. Video media also address limitations in healthcare settings where staff may not have sufficient time to deliver comprehensive counseling. This confirms that video is a suitable educational tool within the dynamics of primary healthcare services.

This study also addresses the gap in the literature previously identified by Sukaisi and Safrina (2024), namely the limited research evaluating the effectiveness of IMD educational videos within the Indonesian context. Much of the existing research has been conducted in countries or regions with different sociocultural characteristics, limiting its generalizability to Indonesia. The present study provides more locally relevant empirical evidence, particularly for urban populations such as that of Makassar. As a city with increasing digital access, Makassar serves as an appropriate setting to examine the effectiveness of video-based education. The results of this study can therefore inform the development of educational programs that are better adapted to local needs. In this regard, the study offers both scientific and practical contributions to evidence-based intervention development.

The educational level of respondents in this study indicates that video-based education can effectively reach mothers with diverse educational backgrounds. Although most participants held a senior high school degree, improvements in knowledge were observed across all educational levels. This finding supports Acharya and Khanal (2015), who noted that education is associated with maternal understanding of IMD, yet visual educational media can transcend such disparities. Videos convey information in a simple and accessible manner, enabling mothers with lower literacy levels to comprehend the material. The consistent improvement in knowledge strengthens the argument that audiovisual media are suitable for use in populations with varying educational attainment. Furthermore, video-based media reduce the need for complex medical terminology, facilitating broader comprehension. Thus, educational videos represent an effective medium for reaching mothers across all educational strata.

Theoretically, this study reinforces the multimedia learning model, which posits that information delivered through a combination of visual and auditory elements is easier to understand and retain particularly in maternal health education. The findings also support health behavior theories suggesting that increased knowledge is a necessary precursor to behavioral change, including IMD practices. Practically, the study provides empirical evidence for primary healthcare centers and health personnel to integrate video-based education into antenatal classes as a standardized and accessible instructional method. Developing more interactive videos, incorporating local languages, and ensuring access through personal digital devices may further increase the effectiveness of maternal education programs. Future research should consider including larger and more geographically diverse samples,

evaluating the long-term effects of video education into the postpartum period, and incorporating behavioral indicators such as direct observations of IMD practice in delivery rooms. Comparative studies examining different educational media (e.g., video, leaflets, digital modules, or face-to-face counseling) are also needed to identify the most effective method for improving IMD outcomes.

Nevertheless, this study has several limitations that should be considered when interpreting the findings. First, the research was conducted in only a few primary healthcare centers in Makassar, which may limit the generalizability of the results to broader populations. Second, knowledge assessment relied on self-reported questionnaires, which are susceptible to social desirability bias and respondents' tendency to provide answers they believe are expected. Third, the educational video intervention was delivered only once, preventing the study from assessing long-term effects on knowledge retention or actual IMD practices after childbirth. Fourth, the study did not measure other supporting variables such as healthcare provider support, maternal psychological readiness, or childbirth experiences factors that may influence the success of IMD. Additionally, the study did not evaluate behavioral changes in delivery rooms, meaning the effects observed are limited to the cognitive domain. Therefore, while the results provide a strong initial understanding, further research is needed before the findings can be applied more comprehensively.

CONCLUSION

This study demonstrates that video-based education is effective in enhancing pregnant women's knowledge of Early Initiation of Breastfeeding (IMD), as evidenced by the significant increase in knowledge scores between the pretest and posttest. These findings reaffirm that audiovisual media can deliver information more clearly, engagingly, and comprehensibly than conventional counseling methods, and are particularly relevant for urban populations such as Makassar, where digital technology access is high. As maternal knowledge improves, the likelihood of successful IMD implementation after childbirth also increases, indicating that video-based educational interventions can serve as an important strategy to support broader maternal and neonatal health programs. The study provides empirical evidence that integrating digital media into antenatal classes is an effective approach that can be incorporated into evidence-based midwifery practice. Despite the positive findings, this study has several limitations that should be acknowledged. The research was conducted using a pre-experimental design without a control group and involved a relatively small sample from a limited number of primary healthcare centers, which may affect the generalizability of the results. In addition, the study focused solely on changes in maternal knowledge and did not assess actual breastfeeding practices following childbirth. Future research is recommended to employ more robust study designs, such as randomized controlled trials or quasi-experimental studies with comparison groups, to strengthen causal inference. Larger and more diverse samples across different regions are also needed to improve external validity. Furthermore, future studies should evaluate long-term outcomes, including the implementation of IMD in delivery settings and exclusive breastfeeding practices, as well as explore the effectiveness of repeated or multimedia-based educational interventions.

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