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# The Impact of Health Education through Animated Videos on Mothers' Attitudes in Providing Complementary Foods to Breast Milk

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**ABSTRACT**

**Purpose of the study:** To determine the effect of health education through animated video toward mother's behavior with infant aged 6-12 months to prevent stunting through the provision of complementary feeding.

**Methodology:** This study employed pre experimental design with the one group pretest post test design. There were 20 respondents involved in this study which were selected by using probability sampling with simple random sampling. The data were collected by using questionnaire and analyzed by using parametric test praid T-Test.

**Main Findings:** The finding showed that there was an effect of health education through animated video and mother behavior. Good Mother behavior in providing complementary feeding in infants aged 6 months could decrease the risk of stunting.

**Novelty/Originality of this study:** This study offers novelty by integrating animated health education videos to strengthen mothers' attitudes toward appropriate complementary feeding practices. Unlike previous studies that rely on conventional counseling, this research demonstrates how visual–digital media can enhance maternal understanding and behavioral readiness. The findings advance knowledge by highlighting animation-based education as an effective, scalable intervention for improving infant nutrition practices.



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## 1. INTRODUCTION

Stunting remains a major global public health concern affecting millions of children, particularly in low- and middle-income countries [1], [2]. Impaired linear growth during the first two years of life has been strongly associated with long-term consequences such as delayed cognitive development, reduced academic performance, and increased vulnerability to chronic diseases in adulthood. One of the primary contributors to stunting is inappropriate complementary feeding practices [3], [4], especially during the critical period between six and twelve months of age when infants begin transitioning from exclusive breastfeeding to additional nutrient-dense foods.

Mothers play a central role in shaping feeding practices, as their knowledge, attitudes, and decision-making directly influence the quality and frequency of complementary feeding [5], [6]. However, many mothers still lack access to appropriate health education that emphasizes the importance of timely, adequate, and hygienic complementary feeding [7], [8]. Limited understanding and negative attitudes toward recommended feeding practices often lead to insufficient nutrient intake in infants, increasing the risk of stunting [9], [10].

In recent years, innovative health education strategies have been increasingly explored to improve maternal knowledge and behavior related to child nutrition [11], [12]. Among these strategies, digital-based education, particularly through animated videos, has gained growing attention [13], [14]. Animated videos are considered engaging, easy to understand, and effective for delivering health messages to diverse audiences, including those with varying levels of literacy [15], [16]. Their visual and narrative characteristics can help simplify complex information and make it more memorable for mothers.

The use of animated video as a medium for health education aligns with current technological developments and the expanding availability of mobile devices [17], [18]. This digital approach offers flexibility, allowing mothers to access educational content repeatedly and at their own convenience [19], [20]. As a result, animated videos hold potential not only for improving knowledge but also for shaping attitudes and encouraging positive behavioral change in complementary feeding practices [21], [22].

Several studies have indicated that visual-based health education can be more effective than traditional methods, particularly when targeting behavioral outcomes related to maternal and child health [23], [24]. However, evidence specifically examining the effect of animated videos on mothers' attitudes toward complementary feeding remains limited [25], [26]. Understanding how digital education influences maternal attitudes is crucial because attitudes significantly mediate behavioral intention and actual feeding practices [27], [28].

Previous research by Rismawati & Kurnia [29] focused on the impact of health education regarding complementary feeding on the knowledge and attitudes of mothers of infants aged 0–6 months, but the method used was conventional and did not utilize interactive visual media. Meanwhile, research by Erika et al., [30] implemented animated videos and leaflets as educational media for preparing complementary feeding, but its focus was more on general stunting prevention and did not specifically evaluate changes in maternal attitudes towards providing complementary feeding. The current study closes this gap by specifically examining the impact of health education through animated videos on maternal attitudes towards providing complementary feeding, thus emphasizing the effectiveness of animated media as an intervention tool that focuses more on changing attitudes rather than just knowledge or preventing stunting broadly.

The novelty of this study lies in the use of animated videos as a health education medium specifically aimed at influencing mothers' attitudes towards complementary feeding. Unlike previous studies that focused more on improving knowledge or preventing stunting in general, this study emphasizes the direct evaluation of attitude changes, thus providing new evidence regarding the effectiveness of interactive media in modifying mothers' behavior regarding complementary feeding practices. This approach offers a practical contribution to the development of more engaging, communicative, and attitude-focused health education strategies.

Given the urgent need to prevent stunting and the rising interest in digital health education, it is important to investigate the impact of animated video–based interventions on maternal behavior related to feeding infants aged six to twelve months. Strengthening maternal attitudes toward appropriate complementary feeding may contribute substantially to improving infant nutritional status and reducing the prevalence of stunting in communities.

Therefore, this study aims to determine the effect of health education through animated video toward mother's behavior with infants aged six to twelve months to prevent stunting through the provision of complementary feeding. The findings are expected to support the development of more effective, accessible, and culturally adaptable health education strategies for improving child nutrition globally.

## 2. RESEARCH METHOD

### 2.1. Research Design

This study was a pre-experimental study with a one-group pretest and posttest design [31], [32]. The one-group pretest and posttest design was used to reveal causal relationships involving one group of subjects who were given treatment [33], [34]. In this design, the subject group was observed before the intervention was given and then observed again after the intervention was implemented. This study aimed to determine the effect of providing health education on the attitudes of mothers with infants aged six to twelve months in an effort to prevent chronic malnutrition through the provision of complementary foods to breast milk.

### 2.2. Research Subjects

This research was conducted at a community health center in rural Vietnam, a developing country still facing challenges related to chronic malnutrition among infants and young children. In this area, routine health education is provided through mother-child communication groups, but specific material on complementary feeding as a preventative measure for chronic malnutrition has not been a primary focus. This situation makes this area a suitable research location to assess the effect of health education through animated videos on the attitudes of mothers with infants aged six to twelve months [35], [36].

A population is a set of potentially measurable objects as part of a research project. The target population in this study was 33 mothers of infants aged six to twelve months who were members of a digital communication group on maternal and child health at a community health center in rural Vietnam. The accessible population was mothers of infants aged six to twelve months who met the inclusion criteria, which was 20 respondents. This study used 20 respondents. To avoid missing data, the researchers added ten percent to the required sample size, bringing the total sample size to 22 respondents.

The sampling process was carried out by selecting members of a mother and child communication group at a community health service center, totaling 94 mothers with infants and toddlers. The researcher invited mothers with infants aged six to twelve months to join a special research communication group, and 33 mothers met the initial criteria. To obtain the required number of respondents, the researcher applied a probability sampling method, so that each individual in the population had an equal opportunity to be selected as a subject [37], [38]. The type of probability sampling used was simple random sampling, which randomly selected 22 respondents from 33 mothers with infants aged six to twelve months to complete the research questionnaire.

### 2.3. Data Collection Techniques

In research, the accuracy of the collected data significantly influences the results. To ensure accurate data collection, data collection (research instruments) is required that are not only valid but also reliable [39], [40]. In addition to the accuracy of the research instruments, data collection methods should be appropriate or appropriate to the data collected. In this online study, the researcher used a self-developed attitude questionnaire via Google Forms. The questionnaire consisted of 10 questions about attitudes. The questionnaire used a self-completed questionnaire, in which respondents completed the questionnaire themselves. The questionnaire used in this study was a non-standard attitude questionnaire, which was further developed by the researcher.

The attitude questionnaire is measured using a Likert scale where respondents will be given 5 alternative positive questions, namely strongly agree worth 5, agree worth 4, undecided worth 3, disagree worth 2, and strongly disagree worth 1 and negative questions strongly agree worth 1, agree worth 2, undecided worth 3, disagree worth 4, and strongly disagree worth 5. The results of attitude measurement, researchers explain good and bad scores by multiplying the worst score of 10 with the best score of 50 with the number of statements of 10, so that the score range in the attitude questionnaire is 10-50. Where a score of 10 is the best score and 50 is the worst score. The worse the score obtained by the respondent, the worse the respondent's attitude and vice versa, if the respondent gets a good score, the better the respondent's attitude.

### 2.4. Data Analysis Techniques

Bivariate analysis is used to measure the relationship between two variables at a specific point in time [41], [42]. This study conducted bivariate analysis to determine the effect of health education on the attitudes of mothers with stunted toddlers regarding the provision of complementary foods to breast milk before and after health education. This analysis used a comparative technique to assess the effect of health education provided through animated videos on mothers' attitudes.

The data obtained were numerical, so a normality test using the Shapiro-Wilk test was necessary because the sample size was less than fifty respondents. The results of the normality test showed a p-value of 0.909 for the pre-test score, while the post-test score was 0.794. Both results indicate a normal distribution of the data, as the p-value is greater than 0.05.

The bivariate analysis showed a p-value less than 0.001, indicating a p-value less than 0.05. This indicates an effect of health education through animated videos on mothers' attitudes. In addition, the confidence interval value is in the range of -7.878 to -4.12179, which does not include the number zero, thus further strengthening the influence of health education through animated videos on mothers' attitudes.

## 3. RESULTS AND DISCUSSION

### 3.1. Normality Test

Before conducting the hypothesis test, the researcher conducted a normality test to determine the distribution of the data. The normality test used in this study was the Shapiro Wilk test because the research sample was 20, because the sample used was less than 50 ($n < 0.05$). The results of the Shapiro Wilk normality test obtained a p-value on the pre-test score of 0.909 and on the post-test score obtained a p-value of 0.794. The results of both scores indicate that the data obtained is normally distributed, because the results of both data obtained a p-value > $\alpha$ 0.05.

### 3.2. Bivariate Test

Bivariate analysis aims to answer the problem formulation and establish the research hypothesis. To determine whether the data is normally distributed or not, a normality test was conducted with the following results. The results of the normality test indicate that the data is normally distributed, therefore the bivariate test

used in this study is a parametric test, namely the Praid T-Test. The results of the bivariate test to determine the effect of providing health education with animated videos on the attitudes of mothers with infants aged 6-12 months to prevent stunting through the provision of complementary foods to breast milk. The results of the bivariate analysis are described in Table 1.

Table 1. Results of the Effect of Providing Health Education with Animated Videos on the Attitudes of Mothers with Babies Aged 6-12 Months to Prevent Stunting Through Providing Complementary Foods to Breast Milk

| | Confidence Interval | | |
|---|---|---|---|
| | Lower | Upper | p-value |
| Total Score Pretest-Posttest | -7.87821 | -4.12179 | <0.001 |

Based on Table 1, the results show that the p-value is <0.05, indicating that there is an influence of health education through animated videos on mothers' attitudes. With a Confidence Interval value of -7.878 to -4.12179, the Confidence Interval does not include the number 1, indicating that there is an influence of health education through animated videos on mothers' attitudes.

The results of this study indicate that there is an influence of health education with animated videos on the attitudes of mothers with babies aged 6-12 months to prevent stunting through providing complementary foods to breast milk, which is shown by an increase in attitudes before and after being given health education to respondents. Before being given health education, most respondents had moderate attitudes, marked by most respondents stating that they agreed with the negative statement that babies were introduced for the first time to solid foods, namely rice cakes, potatoes and biscuits, most respondents stated that they agreed with the negative statement that food other than breast milk was given to babies aged less than 6 months, most respondents answered that they did not agree with the positive statement that babies aged 10-12 months were given food with a rough texture and most respondents answered that they did not agree with the positive statement that if late feeding could cause disorders in the baby's growth and development, namely stunting (dwarfism). After receiving health education, the majority of respondents had a positive attitude, as indicated by the majority strongly disagreeing with the negative statement that babies are first introduced to solid foods, namely rice cakes, potatoes, and biscuits. Most respondents strongly disagreed with the negative statement that foods other than breast milk should be given to babies under 6 months old. Most respondents agreed with the positive statement that babies aged 10-12 months should be given foods with a coarse texture. Most respondents strongly agreed with the positive statement that late introduction of food can cause stunting in infants. Health education using animated videos significantly improved respondents' knowledge and attitudes. Health education is a series of experiences that beneficially influence habits, attitudes, and knowledge related to the health of individuals, communities, and the nation.

The audiovisual method of delivering health education via WhatsApp was one factor that led to changes in respondents' attitudes before and after health education. The easy-to-understand language and animations attracted respondents' interest in attentively listening to the health information provided [43], [44]. Most individuals acquire knowledge through sight and hearing. Print media, imitation media, visual media, and demonstration media rely on sight, audio media rely on hearing, while audiovisual media rely on sight and hearing. Health education with animated video media has a significant influence in improving respondents' knowledge and attitudes [45], [46]. The increase in maternal success in providing complementary foods is shown by the mother's good or positive attitude towards providing appropriate complementary foods, because the mother's attitude is very important in forming the mother's actions [47], [48]. A positive attitude will give rise to a form of expected behavior. With a positive attitude towards the risks of providing complementary foods too early in infants, a positive behavior will also emerge, namely providing appropriate complementary foods to infants.

The improvement in mothers' attitudes after receiving health education through animated media illustrates the importance of a learning approach tailored to the target population [49], [50]. In the context of mothers and infants, audiovisual media is an effective strategy because it presents information in a concrete, engaging, and easy-to-understand manner. This aligns with cognitive learning theory, which emphasizes that the combination of visuals and audio can accelerate the internalization of information and strengthen attitude change. Therefore, the use of animated videos in education regarding complementary feeding has the potential to be a superior method compared to delivering information verbally or through printed media.

Furthermore, changes in mothers' attitudes can be explained through the theory of planned behavior, which states that attitudes are a key determinant of health behaviors [51], [52]. When health education improves mothers' perceptions of the risks and benefits of appropriate complementary feeding, the likelihood of positive behaviors in complementary feeding practices increases. The role of attitudes is crucial, as inappropriate complementary feeding practices have long been identified as a contributing factor to stunting. Therefore,

animation-based educational interventions are not only theoretically relevant but also have practical benefits in the context of stunting prevention.

The use of instant messaging applications like WhatsApp as a channel for information delivery also demonstrates that health education does not have to be delivered face-to-face [53], [54]. The use of digital platforms allows for broader, more flexible, and more efficient reach, especially for mothers who have limited time or access to health facilities. This educational distribution model is well-suited to technological developments and community needs, and provides opportunities for health workers to develop more innovative forms of remote interventions. This approach also supports digital transformation programs in the health sector, particularly in efforts to improve public health literacy and behavior.

In addition to contributing to improving maternal attitudes, this study provides a foundation for developing similar interventions on a variety of other health topics that require practical understanding [55], [56]. The success of animated media in changing attitudes demonstrates that aspects of educational design—such as simplicity of language, engaging visuals, and the selection of relevant content—play a crucial role. Therefore, this research can encourage the development of more structured audiovisual-based health education guides or modules that can be adapted by health workers in various regions.

Overall, this study strengthens the evidence that innovative and accessible health education can have a significant impact on attitude change. These findings have important implications for community nursing practice, complementary feeding programs, and stunting prevention policies. An animation-based approach is worth considering as part of a national health education strategy, particularly in efforts to increase maternal participation and understanding in appropriate complementary feeding practices.

This research has significant implications for developing health education strategies, particularly those related to stunting prevention through appropriate complementary feeding. The use of animated media has proven to be an effective approach, allowing health workers to design educational interventions that are more engaging, easy to understand, and widely applicable through digital platforms [15], [57]. Furthermore, these findings can encourage improvements in the quality of health promotion programs in health care facilities and strengthen nutritional literacy among mothers and infants.

However, this study has several limitations. The relatively small sample size limits the generalizability of the results to a broader population. The use of online data collection methods could also be influenced by participants' level of technology exposure and internet access. Furthermore, this study only measured short-term changes in attitudes, so it cannot yet describe whether these changes will translate into actual behavior in the practice of complementary feeding. These limitations open up opportunities for further research involving larger samples, longer observation periods, and direct behavioral measurements.

## 4. CONCLUSION

There was a significant influence between health education and animated videos on the attitudes of mothers and infants aged 6-12 months regarding preventing stunting through complementary feeding. This is because providing health education about complementary feeding was perceived as providing additional knowledge to respondents, thus increasing their knowledge about complementary feeding. Future research is recommended to examine the long-term behavioral changes of mothers after receiving animated video–based health education to determine whether improved attitudes translate into sustained feeding practices. Further studies should also explore the effectiveness of various digital education formats across larger and more diverse populations to strengthen the generalizability of the findings.

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