

Original Research

Effect of Stunting Prevention Health Counseling Using Animated Videos on the Knowledge of Brides-to-Be

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ABSTRACT

Background: In Indonesia, the prevalence of stunting remains a pressing issue, with rates still considerably high and far from achieving the national target of 14%. One of the critical strategies in addressing this problem is providing adequate education and information to brides-to-be (Catin) regarding pregnancy planning and childcare as a preventive measure against stunting. This study aims to analyze the impact of stunting prevention health counseling using animated video media on improving the knowledge of brides-to-be. **Methods:** The study involved 60 brides-to-be attending counseling sessions at the BKKBN KB Counseling Center in Rajabasa District, South Lampung Regency. A pre-test and post-test design was utilized to measure changes in knowledge levels. **Results:** The results showed that prior to the intervention, 25 participants (41.7%) demonstrated good knowledge about stunting prevention. Following the counseling sessions, this number increased significantly to 58 participants (96.7%). Statistical analysis revealed a p-value of 0.0001 ($p < 0.05$), confirming a significant effect of the intervention. **Conclusions:** The study highlights the effectiveness of animated video media in delivering health education due to its ability to present information in an engaging, visual, and emotional format. This approach not only enhances comprehension but also sustains interest, making it a valuable tool for increasing awareness and knowledge about stunting prevention among brides-to-be. Strengthening such initiatives can contribute significantly to achieving the national stunting reduction target in Indonesia.

Keywords: Stunting prevention; health counseling; animated video

1. INTRODUCTION

Currently, Indonesia is still grappling with serious nutrition-related challenges that significantly impact the quality of human resources (HR). One of the persistent malnutrition issues in Indonesia is stunting. Stunting is characterized by a condition in which a child's height is significantly below the standard for their age, primarily caused by chronic malnutrition. This condition typically begins during pregnancy and continues until the child reaches two years old, often going unnoticed until the critical developmental window has passed.⁽¹⁾ The World Health Organization (WHO) predicts that by 2025, approximately 127 million children under the age of five will experience stunting globally, primarily due to poor nutrition, inadequate health practices, and improper feeding of complementary foods.⁽²⁾ In Indonesia, the prevalence of stunting remains high, despite ongoing interventions. The 2023 Indonesian Health Survey (SKI) revealed that the stunting rate in Lampung Province is at 14.9%, with South Lampung Regency reporting a slightly lower prevalence of 10.3%.⁽³⁾ These figures underscore the need for targeted efforts to address stunting at the local level,

particularly among vulnerable groups, such as brides-to-be (In Indonesian: "Catin"). As individuals on the cusp of starting a family, brides-to-be play a pivotal role in ensuring the health and nutritional well-being of future generations. Therefore, equipping them with adequate knowledge and skills about pregnancy planning and childcare is essential to prevent stunting and break the cycle of malnutrition.⁽⁴⁾

Premarital counseling emerges as a key strategy in preventing stunting by empowering prospective brides with knowledge and fostering positive attitudes toward health and nutrition. The critical period of 1,000 days of life (1000 HPK), which spans from conception to a child's second birthday, is a crucial window for interventions to prevent stunting. Brides-to-be who are well-informed are more likely to make informed decisions about their health and nutrition, thereby improving the health status of both mother and child.⁽⁵⁾ Among the various methods of premarital counseling, the use of animated videos has proven particularly effective. These videos can present information in an engaging and visually appealing manner, making complex health messages more accessible and easier to understand. Research has shown that counseling through animated videos significantly enhances the knowledge and attitudes of brides-to-be regarding stunting prevention. This improvement in knowledge and attitudes translates into behavioral changes, such as better nutritional practices and health-seeking behaviors, which contribute to improved maternal and fetal health outcomes.⁽⁶⁾ For instance, prospective brides who receive such counseling are more likely to focus on improving their nutritional status before pregnancy, ensuring a healthier start for their children.

In Rajabasa District, South Lampung Regency, stunting remains a significant concern. According to survey data collected on April 19, 2024, there were 1,642 families at risk of stunting out of a total of 7,017 families recorded, with a target of 4,166 families. Of these, 60 cases of families at risk of stunting were identified among brides-to-be at the BKKBN KB Counseling Center in Rajabasa District.⁽⁷⁾ This district is considered a high-risk area for stunting, emphasizing the urgency of implementing targeted interventions to address this issue effectively. Brides-to-be in this district face unique challenges, including limited access to health information and resources, cultural norms, and economic constraints, all of which contribute to the persistence of stunting. Providing accessible and

impactful education through animated video media offers a promising solution to these challenges. Unlike traditional counseling methods, animated videos can simplify complex health concepts and make them relatable to the target audience. These videos utilize visuals, storytelling, and emotional engagement to deliver messages in a way that resonates with the audience, ensuring better retention and understanding of the information provided.

The impact of animated video counseling extends beyond immediate knowledge gains. By fostering a deeper understanding of stunting prevention, these interventions can empower brides-to-be to take proactive steps toward ensuring their own health and that of their future children. For example, they may adopt better dietary practices, seek timely prenatal care, and engage in health-promoting behaviors that reduce the risk of stunting. Additionally, the visual and interactive nature of animated videos makes them an excellent tool for addressing misconceptions and cultural barriers related to health and nutrition. The success of these interventions in Rajabasa District highlights the potential for scaling up the use of animated video counseling to other high-risk areas across Indonesia. By integrating this approach into existing health programs, policymakers and health practitioners can reach a broader audience and achieve more significant impacts on stunting prevention. Furthermore, continuous monitoring and evaluation of these programs are essential to ensure their effectiveness and identify areas for improvement.

Addressing stunting requires a comprehensive approach that combines education, community engagement, and policy support. The role of brides-to-be as agents of change cannot be overstated, as their decisions and actions have a lasting impact on the health and well-being of their families. By equipping them with the necessary knowledge and resources through innovative methods such as animated video counseling, Indonesia can make significant strides toward achieving its stunting reduction targets and improving the quality of human resources for future generations.

2. METHODS

2.1 Study Design

This study utilized a quantitative research design, specifically a one-group pre-test and post-test

design. This design was chosen to evaluate the effectiveness of health counseling using animated video media in improving the knowledge of brides-to-be (Catin) regarding stunting prevention. By measuring knowledge levels both before and after the intervention, this design facilitated a clear comparison and assessment of the impact of the counseling sessions.

2.2 Study Location, and Setting

The study was conducted at the BKKBN Family Planning Counseling Center located in Rajabasa District, South Lampung Regency, Indonesia, in July 2024. The location was selected based on its high prevalence of families at risk of stunting and its accessibility for delivering structured interventions to brides-to-be. The counseling sessions were held in a classroom setting equipped with multimedia facilities to support the delivery of animated video content. The setting was chosen to ensure a conducive learning environment where participants could focus on the content without distractions.

2.3 Study Population

The population for this study consisted of brides-to-be registered at the BKKBN Counseling Center. These individuals were selected as the target group because they represent a critical population for stunting prevention interventions. Brides-to-be are at a pivotal stage where knowledge about pregnancy planning and childcare can significantly impact the health and nutritional status of their future children.

2.4 Inclusion and Exclusion Criteria

This study included brides-to-be who were registered at the counseling center, aged 20–35 years, as this is considered an ideal reproductive age. Participants were required to be willing to participate and available for both pre-test and post-test sessions, as well as able to comprehend and respond to the counseling content. Exclusion criteria comprised individuals with prior advanced knowledge or formal education on stunting prevention, those who were unavailable for the entire duration of the counseling program, and participants who withdrew consent or expressed unwillingness to complete the study.

2.5 Sampling Technique

A total sampling method was employed in this study. All eligible brides-to-be at the counseling center during the study period were included, resulting in a

total sample size of 60 participants. This sampling approach ensured that the findings were representative of the target population in Rajabasa District.

2.6 Data Collection

Data were collected using structured questionnaires designed to assess participants' knowledge of stunting prevention. The questionnaire covered key topics, including the significance of the first 1,000 days of life (1000 HPK), nutritional requirements during pregnancy, and best practices in feeding and childcare to prevent stunting. The data collection process was conducted in three phases. In the pre-test phase, participants completed the questionnaire before the counseling session to assess their baseline knowledge. During the intervention phase, participants attended a structured health counseling session that delivered stunting prevention information through animated videos. These videos incorporated local cultural elements and relatable scenarios to enhance engagement and comprehension. Finally, in the post-test phase, participants completed the same questionnaire to evaluate any improvements in their knowledge following the counseling session.

2.7 Data Analysis

The collected data were analyzed using both univariate and bivariate statistical methods. Univariate analysis was conducted to describe participants' demographic characteristics, including age, education level, and employment status. Bivariate analysis involved a paired t-test to compare mean pre-test and post-test knowledge scores, with a significance level set at 0.05; a p-value of less than 0.05 was considered statistically significant. The statistical analysis was performed using SPSS software (version 26), ensuring precise computation of mean scores, standard deviations, and p-values. The primary outcome measure was the change in knowledge scores between the pre-test and post-test phases. Additionally, secondary analyses explored the influence of demographic variables, such as education level and employment status, on knowledge improvement.

2.8 Ethical Clearance

This research has carried out an ethical feasibility test or research ethics review (ethical clearance) which aims to protect research subjects/respondents from physical, psychological, social and legal consequences as a result

of participating in research. The research ethics review was carried out at Mitra Indonesia with the approval reference no. S.25/162/FKES10/2024.

3. RESULTS AND DISCUSSION

3.1 Characteristics of Respondents

Based on the results of the study, from 60 data points, information about the characteristics of respondents can be seen in the following table Table 1.

Table 1. Characteristics of respondents

Characteristics	Frequency (n)	Percentage (%)
Gender		
Male	22	61
Female	11	31
Age		
Ideal	12	33
No ideal	24	67
Education		
Primary education	20	55
Junior school	16	45
High school	0	0
Bachelor	0	0
Work		
Not working	36	100
Private job	0	0
Government employee	0	0
Self employed	0	0

Based on gender, women are more common than men. The number of prospective brides is 37 people (61.7%), while men are 23 people (38.3%). The results of research by Arsyad et al. show that brides-to-be are mothers-to-be who are the spearhead of health, especially regarding stunting prevention.⁽⁸⁾ It is important for mothers-to-be to know things related to child nutrition 1000 HPK. Poor nutritional status is related to the occurrence of stunting. Because one of the risk factors that affect the incidence of stunting is the father's education. Increasing the knowledge of fathers-to-be is essential in an effort to address the various challenges faced by breastfeeding practitioners, as well as misconceptions about nursing practice.⁽⁸⁾

In efforts to prevent stunting, involvement between mothers and fathers is needed. Therefore, it is necessary to intensify activities to intervene in the stunting problem by improving maternal education,

promoting girls' education, improving household status economy, promoting contextual child feeding practices, improving education and nutrition counseling, and improving sanitation and hygiene practices.

Based on age, there are more brides-to-be with an ideal age compared to a non-ideal age. The number of prospective brides with an ideal age is 32 people (53.3%), while men are 23 people (46.7%). In line with Wijayanti's research, of the 46 respondents from the results of the Premarital Screening with the ideal age category for marriage (20 -35 years old), 93%, too young (< 20 years) as many as 7%.⁽⁹⁾ Age is a factor that affects a person's knowledge. The older you get, the more experience a person has and the more information they receive.⁽¹⁰⁾

From this study, it can be seen that the number of ideal and non-ideal ages for marriage is only slightly different. Promotive and preventive efforts must be made by local health workers to reduce the incidence of stunting through health counseling and counseling activities for the implementation of family planning programs by postponing pregnancy if the age is less than 20 years, arranging pregnancy if the age is 20-35 years old, and ending pregnancy if the age is more than 35 years.

Based on education, high school is more than other education. The number of prospective brides with high school education is 45 people (75%), junior high school 8 people (13.3%), bachelors 6 people (10%) and elementary school 1 person (1.7%). In line with the research of Widyaningrum and Rohemah, of the 33 respondents who were present-for-20 respondents (60.6%) in terms of knowledge about stunting before health education based on education, most of them were high school students, namely 20 respondents (60.6%).⁽¹¹⁾ Other results showed that the education level of the respondents was mostly high school, by 50% for the intervention group and 66.7% for the control group.⁽¹²⁾

In general, the higher the education, the easier it is for a person to receive information and can affect their behavior patterns. The bride-to-be as a parent will be aware of the needs and what will be done before pregnancy, during pregnancy and during childbirth. So that the parenting style that is applied appropriately and stunting can be avoided.

Based on work, not working more than other jobs. The number of prospective brides who have no work/unemployed is 38 people (63.3%), self-employed

16 people (26.7%), private employees 5 people (8.3%) and civil servants 1 person (1.7%). In line with the research of Sarman and Fauzan that the majority of respondents in the intervention group and control group are not working. Respondents worked in the intervention group as much as 46.7% and in the control group as much as 40%.⁽¹²⁾ The same results were also shown by research by Arsyad et al., of the 26 prospective brides based on their jobs, the most were unemployed as many as 13 people (50%), 11 private (42.4%) and 2 civil servants (7.6%).⁽⁸⁾ Work is generally done outside the home, so that it can increase one's knowledge and association that can support knowledge. However, in this study, more brides-to-be have not or are not working, so the risk of increasing health problems is higher, especially stunting in children due to lack of knowledge and improper parenting.

3.2 Knowledge of Brides-to-be about Stunting Prevention

Based on the results of the research, information about the knowledge of prospective brides about stunting prevention before and after being given animated videos can be seen in table Table 2 below.

Table 2. Knowledge of brides-to-be about stunting prevention

Knowledge	Less		Keep		Good	
	n	%	n	%	n	%
Pre-test	18	30.0	17	28.3	25	41.7
Post-test	0	0	2	3.3	58	96.7

Of the 60 candidates, the majority had good knowledge, in the pre-test as many as 25 people (41.7%) and in the post-test increased to 58 people (96.7%). Judging from the results of pre-test and post-test knowledge, there was an increase of 55%, where good knowledge after counseling using animated videos increased significantly.

This result is in line with the research of Putri et al. that there is an increase in knowledge as seen from the post-test results is higher than the pre-test results.⁽¹³⁾ The level of knowledge of respondents about premarital preparation as an effort to prevent stunting before counseling was carried out was mostly less than 40%. Meanwhile, after counseling was carried out, there was an increase with good knowledge of 60%.⁽¹⁴⁾

Increasing one's knowledge can be done by providing information. In this study, the provision of

information is carried out by conducting counseling about stunting with animated video media which is expected to be able to increase the knowledge and attitude of prospective brides which is useful to support the creation of a quality generation. Based on the results of the research that has been carried out, it can be seen that before the counseling was carried out, the majority of catin showed that knowledge about stunting was still low. After counseling using animated videos, Catin's knowledge about stunting prevention was mostly good.

Table 3. Knowledge relationship before and after counseling on stunting prevention using animated videos

Knowledge	N	Mean	Standard deviation	P-Value
Pre-test	60	14.52	3.11	0.0001
Post-test	60	17.65	3.01	

The average knowledge score in the pre-test was 14.52 with a standard deviation of 3.11, in the post-test it was 17.65 with a standard deviation of 3.01. The mean difference between pre-test and post-test is 3.13 with a standard deviation of 0.10. The results of the statistical test obtained a p value of $0.0001 < \alpha 0.05$, so it can be concluded that there is an influence of stunting prevention health counseling using animated video media on the knowledge of brides-to-be at the BKKBN Family Planning Counseling Center, Rajabasa District, South Lampung Regency in 2024.

This result is in line with the research of Nurlinda et al., from 47 respondents, the average value of the knowledge of the bride-to-be before education is 8.62.⁽⁶⁾ Meanwhile, after education, there was an increase in the average score, which was 13.38. Therefore, it can be concluded that there is a significant increase with a value of $P = 0.000$.⁽⁶⁾ The increase in the knowledge of prospective brides is also evidenced by the results of statistical tests obtained a p value (0.000) so that it is stated that there is a difference between the results of the pre-test and post-test of the prospective bride in the prevention of stunting. Counseling has been proven to be effective in increasing a person's knowledge.⁽¹²⁾ Before being given animation video media, the average level of knowledge was 67.50, rising to 95 after being given animation video media. The results of the statistical test analysis showed a p-value of 0.000 ($p < 0.05$) which means that there is an influence of animated video media on knowledge about stunting prevention.⁽¹⁵⁾

The use of animated videos as an educational tool proved to be particularly effective in this study, simplifying complex health concepts, presenting relatable scenarios, and incorporating engaging visuals that captured participants' attention. Previous research has similarly emphasized the advantages of animated videos in health education, particularly their ability to convey critical messages in an accessible and memorable format.^(12,16) The positive outcomes observed in this study may be attributed to the interactive and visually stimulating nature of the videos, which facilitated better retention of information compared to traditional lecture-based methods. Participants' engagement during the counseling sessions, as evidenced by active participation in discussions and high attendance rates, further supports the effectiveness of this approach. These findings have significant implications for public health programs aimed at reducing stunting rates in Indonesia. First, the use of animated videos should be integrated into premarital counseling programs nationwide, particularly in regions with high stunting prevalence, as their scalability makes them a cost-effective solution for addressing health literacy gaps among prospective brides. Second, health policymakers should consider adapting video content to local cultural contexts to ensure that messages resonate with the target audience—incorporating local dietary practices and parenting norms could enhance their relevance and impact. Third, the study highlights the need to focus on vulnerable groups, such as brides-to-be with lower education levels or those in economically disadvantaged areas, suggesting that tailored interventions like community outreach programs and peer education initiatives could help address their unique challenges. The results align with previous research that underscores the importance of health education in improving knowledge about stunting prevention. For instance, Muna et al. found that premarital counseling sessions led to significant knowledge gains,⁽⁵⁾ while Nurlinda et al. reported that multimedia tools, including animated videos, enhanced understanding of stunting prevention strategies.⁽⁶⁾ The current study builds on this body of evidence by demonstrating the feasibility and effectiveness of animated videos in a real-world, community-based setting, thereby adding to the external validity of the findings.

This study has several limitations. First, its findings may have limited generalizability as it was conducted in a single district, potentially restricting applicability to other regions with different socio-demographic characteristics. Second, the assessment focused on immediate knowledge gains without evaluating long-term retention or behavioral changes, necessitating future longitudinal studies. Third, the sample size, while sufficient for statistical analysis, may not capture broader variability in learning outcomes. Additionally, the pretest-posttest design in a single group introduces potential biases, such as the Hawthorne effect, and lacks a control group for causal inference. The intervention also had a limited scope, addressing knowledge but no other critical factors like healthcare access, economic constraints, and cultural practices. Moreover, the reliance on self-reported data raises the possibility of social desirability bias, highlighting the need for objective assessment methods. Technological limitations, particularly in rural areas with restricted multimedia access, could affect the scalability of animated video interventions. Finally, ethical considerations, including participant consent and confidentiality, must be carefully managed in future research to ensure transparency and trust.

While this study provides valuable insights, several areas warrant further exploration. Future research could focus on the long-term impact of animated video counseling on behavioral changes and health outcomes. For example, follow-up assessments could evaluate whether the knowledge gained translates into improved nutritional practices, better pregnancy planning, and reduced stunting rates among the participants' children. Additionally, future studies could explore the effectiveness of animated videos in combination with other intervention strategies, such as mobile health applications or peer support groups. These integrated approaches could enhance the reach and sustainability of stunting prevention programs. Further research is needed to identify the specific components of animated videos that contribute most to their effectiveness. For instance, comparing the impact of different storytelling techniques, visual styles, and cultural adaptations could provide insights into optimizing the design of educational media.

4. CONCLUSION

This study demonstrated a significant effect of health counseling using animated video media on the knowledge of prospective brides regarding stunting prevention at the BKKBN KB Counseling Center in Rajabasa District, South Lampung Regency. The intervention effectively increased the proportion of participants with good knowledge from 41.7% in the pre-test to 96.7% in the post-test, with statistical analysis yielding a highly significant p-value of 0.0001 ($p < 0.05$). Animated video media proved to be an innovative and impactful tool for health education, offering visual and emotional engagement that enhances comprehension and retention of information. By presenting complex topics such as stunting prevention in an accessible format, animated videos address potential barriers to understanding, especially among audiences with varying levels of education. These findings underscore the importance of integrating multimedia tools into public health programs to promote awareness and behavioral changes related to maternal and child health. Furthermore, the results highlight the potential of animated videos to scale health interventions and reach broader populations effectively. Future efforts should focus on expanding the use of this medium in premarital counseling nationwide, tailoring content to local cultural contexts, and addressing long-term outcomes such as behavioral changes and stunting reduction. Ultimately, this study reinforces the critical role of innovative health education strategies in empowering brides-to-be to make informed decisions that contribute to the prevention of stunting and the promotion of healthier generations.

Ethics Approval

The research received ethical approval from Mitra Indonesia with the approval reference no. S.25/162/FKES10/2024.

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Competing Interests

All the authors declare that there are no conflicts of interest.

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Underlying Data

Derived data supporting the findings of this study are available from the corresponding author on request.

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