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EFFECT OF EDUCATIONAL VIDEO ON SANITATION KNOWLEDGE AMONG MOTHERS OF STUNTED TODDLERS IN BANTUL

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ABSTRACT

Effect of Educational Video on Sanitation Knowledge Among Mothers of Stunted Toddlers in Bantul. *Stunting is a nutritional problem in toddlers characterized by height-for-age below the growth standard. This condition remains a significant public health challenge in Indonesia, including in Bantul Regency, Special Region of Yogyakarta, where stunting prevalence is relatively high. One of the contributing factors to stunting is poor food and beverage sanitation, coupled with mothers' limited knowledge of food hygiene. Health education is essential to improve mothers' understanding and practices related to proper sanitation. This study aimed to analyze the effect of health education using educational videos on improving knowledge of food and beverage sanitation among mothers of stunted toddlers in Bibis Hamlet, Sewon, Bantul. This research employed a quasi-experimental design using a one-group pretest-posttest with a control group. The intervention group received education through an educational video, while the control group was provided with a leaflet. Primary data were collected through questionnaires administered before and after the intervention. The Mann–Whitney test was used for statistical analysis due to the non-normal distribution of the data. The results showed an increase in knowledge in both groups, with a higher increase observed in the intervention group (68%) compared to the control group (61%). Statistical analysis indicated a significant difference between the two educational methods. In conclusion, educational videos were found to be more effective in enhancing knowledge of food and beverage sanitation among mothers of stunted toddlers. This method can serve as a practical and accessible health education strategy to support sustainable stunting prevention efforts in the community.*

INTRODUCTION

Stunting is a nutritional problem among toddlers characterized by height-for-age measurements that fall below the standard growth curves. This condition remains a public health challenge in Indonesia, including in Bantul Regency, Special Region of Yogyakarta, which reported that approximately 6% of children under five were stunted in 2023. One of the contributing factors to stunting is the lack of maternal knowledge regarding food and beverage sanitation, as well as poor hygiene behavior[1].

Food and beverage hygiene and sanitation refers to efforts to control food-related factors, individuals, environments, and equipment that can cause disease or health disturbances[2].
The core principles of hygiene and sanitation include control over facilities, equipment, personnel, and food ingredients to prevent foodborne illnesses or health risks. The six main principles of food and beverage sanitation consist of: food ingredient selection, food storage, food processing, food transportation, storage of prepared food, and food serving[3].
Video is a media format that contains moving images and sound. Due to its easy dissemination from person to person, video holds great potential as an educational tool for the community. A video presentation that is both seen and heard enables viewers to retain approximately 50% of the information presented[10].
The Special Region of Yogyakarta (DIY) is one of the provinces with a high prevalence of stunting, including Bantul Regency. In 2023, over 47,000 children under the age of five were recorded, with 6% experiencing stunting[4]. One of the affected areas in Bantul is Timbulharjo. Given the high rate of stunting in the study area and the potential of educational videos as a health promotion tool, this study aims to analyze the effect of video-based education on improving food and beverage sanitation knowledge among mothers of stunted toddlers in Dusun Bibis, Timbulharjo, Sewon, Bantul.

MATERIALS AND RESEARCH METHODS

This study employed a quasi-experimental method with a One Group Pretest-Posttest with Control Group design. Primary data were collected directly from respondents using a questionnaire designed to assess knowledge levels regarding food and beverage sanitation. The questionnaire was administered before (pretest) and after (posttest) the educational intervention.
The research procedure consisted of three stages. The preparation stage included obtaining site permissions, developing the educational video and leaflet, constructing and validating the questionnaire, scheduling the intervention, and establishing the research ethical guidelines.
During the implementation stage, pretest questionnaires were distributed to respondents, followed by the educational intervention—video screening for the experimental group and leaflet distribution for the control group—concluding with the posttest questionnaire. In the data processing stage, the completed questionnaires were tabulated and analyzed using SPSS software. As the data were not normally distributed, comparisons between the two groups were analyzed using the Mann-Whitney test.

RESEARCH RESULTS AND DISCUSSION

Respondent Characteristics

Table 1. Respondent Characteristics by Gender, Age, and Education Level

Characteristics	Experimental Group		Control Group	
	Total	**Percentage**	**Total**	**Percentage**
Gender				
Male	-	-	-	-
Female	29	100%	29	100%
Age				
20 – 29 Years Old	10	34%	9	31%
30 – 39 Years Old	15	52%	17	59%
40 – 49 Years Old	4	14%	3	10%
Education				
Elementary School	1	3%	3	10%
Junior High School	5	17%	8	28%
Senior High School	19	66%	15	52%
Bachelor's Degree	4	14%	3	10%

The characteristics of respondents based on gender in both the experimental and control groups showed that 100% were female. Based on age, the majority of respondents in the experimental group were aged 30–39 years (52%), while in the control group, the majority were also aged 30–39 years (59%). In terms of education level, most respondents in the experimental group had completed senior high school or equivalent (66%), while in the control group, the highest percentage also had a senior high school or equivalent education (52%).

Descriptive Data Analysis

Table 2. Knowledge Scores in the Experimental and Control Groups

Group	Average Knowledge Score			Improvement in Knowledge
	Pretest	*Posttest*	Difference	
Experimental	52,24	87,93	35,34	68%
Control	49,65	80	30,34	61%

Based on Table 2, it is shown that the difference in scores in the experimental group after being given educational counseling using an educational video was 35.34 (68%), while the difference in scores in the control group after being given leaflet counseling was 30.34 (61%).

Shapiro-Wilk Normality Test

Table 3 Normality Test Results for Pretest and Posttest Scores in the Experimental and Control Groups

Group	*Sig. (p.value)*		Note
	Pretest	*Posttest*	
Experimental	0,037	0,009	The data were not normally distributed.
Control	0,013	0,013	The data were not normally distributed.

Table 3 shows that the p-values for both the pretest and posttest in the experimental and control groups were less than 0.05, indicating that the data were not normally distributed. Therefore, the analysis was continued using the Mann-Whitney test.

Table 4. Results of the Normality Test for the Difference Between Pretest and Posttest Scores in the Experimental and Control Groups

Group	*Sig. (p.value)*	Note
Eksperimen	0,011	The data were not normally distributed.
Kontrol	0,008	The data were not normally distributed.

Table 4 shows a significance value (p-value) of less than 0.05 for the difference in scores between the experimental and control groups, indicating that the data were not normally distributed. Therefore, further analysis was conducted using the Mann-Whitney test.

Mann-Whitney Test

Table 5. Results of the Mann-Whitney Test for the Experimental and Control Groups

Group	*Mean Rank*		*Sig. (p.value)*
	Pretest	Posttest	
Experimental	15,00	44,00	0,000
Control	15,00	44,00	0,000

The results of the Mann-Whitney test between the experimental and control groups yielded a p-value of 0.000. Thus, there is a statistically significant difference in the pretest and posttest scores between the experimental and control groups.

Table 6. Comparison of the Score Differences Between the Experimental and Control Groups

Group	*Mean Rank*	*Sig. (p.value)*
Experimental	35,76	0,004
Control	23,24	

The Mann-Whitney test yielded a p-value of 0.004, indicating that the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted. This result demonstrates a significant difference in the knowledge score improvements between the group receiving educational video intervention and the group using leaflets. Both methods increased maternal knowledge regarding food and beverage sanitation; however, the experimental group showed an average increase of 68%, compared to 61% in the control group. The Mann-Whitney test result ($p = 0.004 < 0.05$) confirms a statistically significant difference between the two educational methods.

Ningrum et al. (2024) reported that video-based stunting education significantly improved maternal knowledge compared to printed media such as booklets[5]. Similar findings were presented by Patty et al. (2023), who found that video media was more effective in enhancing nutritional understanding among mothers of toddlers[6]. A study in Bone Bolango (2020) showed that educational videos had a stronger impact on health knowledge improvement than conventional methods[7]. Research in Enrekang (2021) reinforced these findings, indicating that video education was more effective in stunting counseling than leaflets[8]. Tiara and Marsudi (2020) also stated that video media can increase audience memory retention by up to 50%[9].

Yuliati et al. (2023) demonstrated that educational videos successfully enhanced community sanitation knowledge[10]. This finding is consistent with a systematic review by Ahmad et al. (2024), which affirmed the effectiveness of videos in maternal health promotion[11]. Masmui et al. (2025) noted that the Peduli Stunting program in Pontianak, which used educational videos, effectively raised nutritional awareness[12]. Fathinatusholihah et al. (2024) also found video education to be superior to e-leaflets in stunting prevention education[13].

In addition, Siburian & Ritonga (2025) highlighted educational videos as a cost-effective and impactful medium for public health outreach[14]. Huriah et al. (2024) explained that digital media, including videos, play a vital role in health education across developing countries[15]. Marlinawati et al. (2023) emphasized that visual multimedia strengthens the effectiveness of health communication[16]. Andayani et al. (2024) supported the use of the Mann-Whitney test for non-normally distributed data[17].

The Environmental Health Review (2021) described the role of Environmental Enteric Dysfunction in stunting, underlining the importance of sanitation interventions through education[18]. Finally, a WHO report (2023) emphasized that digital and visual media are globally effective strategies in nutritional education programs[19].

CONCLUSIONS AND RECOMMENDATIONS

This study concludes that educational videos are more effective in improving maternal knowledge on food and beverage sanitation for mothers of stunted toddlers compared to leaflets. This audiovisual method has a significantly positive impact and can serve as an innovative alternative in community health education.

It is recommended that educational videos be widely utilized in nutrition and sanitation outreach programs, particularly in regions with high stunting rates. Further research is needed to explore the effectiveness of videos with varying content, duration, and delivery methods to achieve optimal behavioral change in stunting prevention.

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