

## Video media is more effective to improve balanced nutrition knowledge

A. Syamsinar Asmi<sup>1</sup>, Indrawati Aris Tyarini<sup>2\*</sup>, M. Khalid Fredy Saputra<sup>3</sup>, Jaimin Adi Putra<sup>4</sup>, Hae Kyoung Son<sup>5</sup>

<sup>1</sup>Health Information Management Study Program, Politeknik Sandi Karsa, Indonesia

<sup>2</sup>Department of Midwifery, Universitas Sains Al-Qur'an Jawa Tengah di Wonosobo, Indonesia

<sup>3</sup>Department of Nursing, Stikes Baitul Hikmah, Indonesia

<sup>4</sup>Department of Nursing, Akademi Kesehatan Konawe, Indonesia

<sup>5</sup>Department of Nursing, Eulji University, Republic of Korea

\*Correspondence: Indrawati Aris Tyarini, Department of Midwifery, Universitas Sains Al-Qur'an Jawa Tengah di Wonosobo, Indonesia. email: [indrawati@unsiq.ac.id](mailto:indrawati@unsiq.ac.id)

Received: 08 September 2024 ◦ Revised: 26 Oktober 2024 ◦ Accepted: 01 December 2024

### ABSTRACT

**Introduction:** Providing appropriate nutrition information is important to increase public knowledge about balanced nutrition. One proven effective method is using video media as a means of education.

**Objective:** Analyze the effectiveness of video media in increasing knowledge about balanced nutrition.

**Methods:** This study uses a quasi-experimental study design without group controls. The population of this study is all students, with a sample of 52 people who meet the inclusion and exclusion criteria. The sampling technique used stratified random sampling.

**Result:** The study showed that the use of video increased the average knowledge score (mean) by 85.96 video ( $p=0.003$ ). This study shows that providing nutrition education with video media is more effective in increasing balanced nutrition knowledge.

**Conclusion:** Video media has been proven more effective in increasing knowledge about balanced nutrition. Video media can present information more interesting, interactive, and visually, making it easier for the audience to understand and remember the material conveyed. A significant increase in knowledge in the group receiving the video media intervention showed that this method is an effective educational tool in balanced nutrition campaigns. Therefore, video media is recommended as a nutrition counseling strategy to expand the reach and impact of health education in the community.

**Keywords:** balanced nutrition, health education, knowledge, video media.



## INTRODUCTION

Balanced nutrition is one of the important factors in maintaining health and preventing various diseases, especially in children and adolescents in the growing period. Although nutrition information has been widely disseminated through different media, public knowledge about the importance of balanced nutrition is still not optimal (Baul *et al.*, 2024). Lack of knowledge about balanced nutrition can lead to various health problems, such as malnutrition, obesity, and vitamin and mineral deficiencies. Balanced nutrition is important in maintaining health and preventing various diseases, especially in children and adolescents in the growth phase. In Indonesia, the prevalence of nutritional problems such as stunting, obesity, and micronutrient deficiencies is still a major challenge in improving public health (Izadi and Moradi, 2024). Therefore, education about balanced nutrition needs to be improved so that people better understand the importance of a healthy and nutritious diet. Video media increases public knowledge about balanced nutrition more effectively than conventional lecture methods. By delivering more interactive, visual, and engaging information, video media can attract the audience's attention and increase the understanding and retention of the information (van de Put *et al.*, 2024).

The importance of balanced nutrition in maintaining health and preventing disease is undeniable, especially in the context of the growth of children and adolescents. Good nutrition affects physical and mental development and the body's resistance to disease (Cox and Piatkowski, 2024). Unfortunately, the lack of public understanding of balanced nutrition is still a challenge, which impacts the increasing number of nutrition-related health problems, such as obesity, malnutrition, and micronutrient deficiencies. Traditional educational methods, such as lectures and direct counseling, are often less effective because they are one-way and less appealing to audiences (Urbanelli *et al.*, 2024). In today's digital era, using more interactive and visual media, such as videos, can be a solution in delivering health information, including education about balanced nutrition. Videos allow for clearer, more engaging, and easily accessible information to various groups through mobile devices and social media (Sandhu *et al.*, 2023). Video media as an educational method to increase balanced nutrition knowledge has proven more effective than conventional lecture methods. Video media can present information visually and interactively, making it more engaging and accessible for audiences. The study showed a significant increase in balanced nutrition knowledge among participants who used video media as an educational tool (Litvin *et al.*, 2024).

Counseling on balanced nutrition has often been carried out through lectures or direct discussion methods. However, this method is sometimes less effective due to limited audience appeal and engagement (Miller *et al.*, 2023). In the digital era, video media has become a potential means to convey information in an interactive, visual, and engaging manner. Video also has an advantage regarding access flexibility, as it can be accessed anytime and anywhere through various digital platforms. Counseling efforts on balanced nutrition have been carried out through various methods, including lectures and direct counseling. However, these traditional methods are often unappealing to audiences, making them less effective in increasing knowledge and changing people's behavior (Chwyl *et al.*, 2024). The current development of information technology provides opportunities to use more interactive and interesting educational methods, one of which is video media. Videos have the advantage of presenting information visually, are easy to understand, and attract more attention to the audience compared to the lecture method (Morgan-Bathke *et al.*, 2023).

Despite various efforts to increase public knowledge about balanced nutrition through traditional extension methods, there is still a significant gap between the expected knowledge and the reality of public understanding (Beleites *et al.*, 2024). Conventional extension methods, such as lectures, are often unable to attract the attention of the audience, resulting in low information retention rates. This results in people not understanding the concept of balanced nutrition even though they attend educational sessions. While digital and interactive media increasingly

dominate the way people access information, many nutrition education programs still rely on traditional methods (Moody et al., [2024](#)). The lack of engaging and informative video media limits people's ability to learn effectively. People in remote areas or with low levels of education often do not have adequate access to accurate nutrition information. Although information resources already exist, the less interesting delivery discourages many people from seeking out more information. There are significant differences in understanding of balanced nutrition among different age groups, especially between younger generations who are more familiar with technology and older generations who may be more skeptical of digital media (Boone et al., [2023](#)).

The use of video media in balanced nutrition counseling shows higher effectiveness than traditional lecture methods. Video media can capture the audience's attention and present information in a more interactive and easy-to-understand way (Molina et al., [2024](#)). The study results show that people who receive education through video media experience a significant increase in knowledge about balanced nutrition. Therefore, it is recommended that health and educational institutions use video media more as an educational tool in nutrition counseling programs. With this approach, it is hoped that public knowledge about balanced nutrition can increase, which in turn can help prevent nutrition-related health problems. Further research is needed to explore these methods' various aspects and effectiveness in a broader context. This study aims to evaluate the effectiveness of video media in increasing knowledge about balanced nutrition compared to traditional lecture methods. It is hoped that the results of this research can contribute to the development of more effective health education strategies that are in accordance with the needs of society in the digital era.

## **METHOD**

This study uses a quasi-experimental design without group controls and a one-group pretest-posttest design. The one-group pretest-posttest design was carried out by measuring before the treatment (pre-test) to obtain relevant information that would occur if there was no treatment of the respondents. During the pre-test, respondents were given research instruments such as questionnaires. Furthermore, respondents were given a research intervention with a predetermined period of time so that they could show the results of the treatment. Then, respondents will be re-measured (post-test) after the intervention. The research was conducted in June-September 2024. The population of this study is all students in grades X and XI, with a sample of 52 people who meet the inclusion and exclusion criteria. The inclusion criteria in this study are active students in grades X and XI who are willing to participate (by signing informed consent). The exclusion criteria in this study are students who are samples for questionnaire and media trials and grade XII students.

The sampling technique used was stratified random sampling. This method was chosen because the population in this study is heterogeneous or diverse. The data was analyzed using statistical tests using SPSS software. The data analysis used was univariate and bivariate. Univariate analysis to find out the distribution picture, the percentage of variables analyzed, and bivariate analysis using paired samples t-test for differential tests to see the difference in pretest-posttest scores of independent T-test knowledge for the effectiveness of poster and video media. This research has received permission from the ethics commission with number B-455/PT19/KE/VI/2024.

## RESULTS

**Table 1. Characteristics of respondents and families**

Variable	Frequency (n)	Presented (%)
<b>Age</b>		
15	5	9.6
16	29	55.8
17	16	30.8
18	2	3.8
15	5	9.6
<b>Gender</b>		
Man	23	44.2
Woman	29	55.8
<b>Father's Education</b>		
Elementary School Graduation	8	15.4
Graduated from junior high school	2	3.8
Finish High School	30	57.7
College	17	32.7
<b>Maternal Education</b>		
Elementary School Graduation	3	5,8
Graduated from junior high school	6	11,5
Finish High School	30	57,7
College	13	25,0
<b>Father's Work</b>		
State Civil Apparatus	4	7,7
Private Employees	19	36,5
Entrepreneur/Trader/Entrepreneur	20	38,5
Not Working	9	17,3

In this study, it is known that the respondents are 15-18 years old. The respondents were 16, with 29 people (55.8%). The dominant gender was female, with 29 people (55.8%). The last education of fathers and mothers is the majority of high school/vocational school graduates, as many as 30 people (57.7%). The average father's job is as an entrepreneur/trader/entrepreneur, as many as 20 people (38.5%), while 76.9% of most mothers are not working/homemakers.

**Table 2. Respondent's Knowledge**

Categories Knowledge	Pretest Video		Posttest Video	
	n	%	n	%
Less	16	61.5		
Enough	7	26.9	15	57.7
Good	3	11.5	11	42.3
Total	26	100.0	26	100,0

Table 2 shows the category of knowledge of the respondents of the video group. In the *pre-test* with video media, 16 people (61.5%) were categorized as lacking knowledge, seven people (26.9%) had sufficient knowledge, and three people (11.5%) had good knowledge. Meanwhile, in the *post-test*, respondents categorized as lacking knowledge did not exist; 15 people (57.7%) had sufficient knowledge, and 11 people (42.3%) had good knowledge.

**Table 3. Differences in adolescent balanced nutrition knowledge before and after being given education with video media**

<b>Video</b>	<b>Mean</b>	<b>SD</b>	<b>Min-Max</b>		
<i>Pre-test</i>	55.00	17.205	20-80		
<i>Post-test</i>	85,96	11.047	70-100		
<b>Variable</b>	<b>Mean</b>	<b>SD</b>	<b>T</b>	<b>df</b>	<b>P value</b>
<i>Pre-test</i>					
<i>Post-test</i>	-30.962	20.689	-7.631	25	0.000

Based on the results of Table 3, the average knowledge score before providing education with video media (pre-test) is 55.00, with a standard deviation of 17.205. After providing education with video media (post-test), an average score of 85.96 was obtained with a standard deviation of 11,047. The difference in mean values between the pre and post-tests is 30.96, with a standard deviation of 20.689. The statistical test results obtained a p-value of 0.000 ( $< 0.05$ ), so it can be concluded that there is a significant difference between the level of knowledge before and after the counseling with video. Video media is more effective in increasing balanced nutrition knowledge than traditional lecture methods. The advantage of video media lies in its ability to present information visually and interactively, making it more interesting and easy for audiences to understand. This makes the absorption of information more optimal, which impacts a more significant increase in knowledge. Therefore, using video media as a balanced nutrition education tool is highly recommended to increase the effectiveness of health extension programs.

## DISCUSSION

The research highlights that video media significantly impacts the audience's understanding of balanced nutrition. Video media has the unique ability to convey information in a more engaging and easy-to-digest way. Visual elements, such as graphics, animations, and illustrations, make complex information more straightforward and engaging. This is important in balanced nutrition, where many people have difficulty understanding nutrition-related technical details. Video media offers opportunities for better interaction than traditional lectures. Audiences can watch videos anytime and anywhere and repeat parts that are difficult to understand. This increases their chances of learning and reinforces understanding. Additionally, videos can be uploaded to digital platforms, reaching more people, including those in remote areas (Metallinos-Katsaras and Beto, 2024). Video media allows for the interactive delivery of information with attractive visual elements. With the use of graphics, animations, and real-life examples, videos are able to explain the concept of balanced nutrition in a clearer and easier-to-understand way. This reduces confusion and helps the audience remember the information conveyed (Arda, Lalla and Suprpto, 2023).

Conveying more interesting information, video media has the potential to influence people's behavior related to eating habits and healthy food choices (Kobilke and Markiewitz, 2024). Research shows that individuals exposed to nutritional information through video media are more likely to apply the knowledge they have gained daily (Duarte et al., 2024). The quality of the video content greatly determines its effectiveness. Videos that are informative, relevant, and presented in easy-to-understand language will increase knowledge (Adhi Putri et al., 2021). Therefore, it is important to involve nutritionists and educators in creating video content to make the information accurate and useful. Although video media has many advantages, there are challenges in its implementation, such as the need for adequate technological infrastructure, especially in areas with limited internet access (Alzaben et al., 2023). In addition, there is also a need to train health workers and extension workers to produce and use video media effectively in educational programs (Suprpto, 2022).

Videos can be accessed anytime and anywhere through various digital platforms, including social media and websites. This allows the audience to learn according to their time and

convenience (Addison-Akotoye et al., 2024). This easy access is very important, especially for people who cannot attend in-person counseling sessions. Videos are more appealing than lecture methods, which are often monotonous. The use of compelling narratives, music, and dynamic visuals in videos can increase audience engagement, so they are more motivated to pay attention and understand the material being conveyed (Wu et al., 2023). Information conveyed through visual media, such as videos, is easier to remember than information conveyed orally. This has positive implications for people's ability to apply knowledge about balanced nutrition in their daily lives (González-Serrano et al., 2024).

This study opens up space for further exploration of the long-term influence of video media on people's nutritional knowledge and behavior. In addition, further studies on comparing various media formats in the context of nutrition education can provide deeper insights (Luthans et al., 2024). Using video media in balanced nutrition counseling is an effective strategy and must be seriously considered in public health education programs. Video media integration is essential in balanced nutrition education programs as an innovative strategy to increase public knowledge (Dewi et al., 2023). By utilizing the advantages of video media, it is hoped that nutrition counseling efforts can be more effective and positively impact people's behavior in maintaining health through a balanced diet (Robinson et al., 2023). The use of video media is significantly more effective in increasing public knowledge about balanced nutrition than conventional lecture methods. The advantages of video media, such as interactivity, visualization, and accessibility, contribute to increased understanding and retention of information among audiences (Alsharairi and Li, 2024).

These results show the importance of innovative educational methods in nutrition counseling, especially in the increasingly evolving digital era. By utilizing video media, health and education institutions can more effectively reach the community, raise awareness, and motivate behavior change related to healthy eating. Recommendations for implementing video media in nutrition education programs include developing quality content, training for health workers, and periodic evaluations to ensure effectiveness. With these measures, it is hoped that public knowledge about balanced nutrition can increase significantly, which in turn will contribute to the improvement of the overall health status of the public.

## CONCLUSION

It can be concluded that video media is more effective in increasing balanced nutrition knowledge than conventional lecture methods. Using video as an educational medium allows for delivering information visually and interactively, which is easier for the audience to understand and remember. This shows that video media can be a handy tool in nutrition campaigns and health education programs, so it is worth considering as the primary method in nutrition counseling to the community. It is hoped that health and educational institutions will utilize video media more widely in nutrition counseling programs because this method has proven effective in increasing public understanding of balanced nutrition. Nutrition education programs through video media must be evaluated periodically to measure their effectiveness. The video content can be adjusted and developed based on the evaluation results to remain relevant and practical.

### Conflicts of Interest:

The authors declare no conflict of interest.

## REFERENCE

- Addison-Akotoye, E. *et al.* (2024) 'Nutrition literacy and decision confidence among nutrition gatekeepers of restaurants', *Food and Humanity*, 3, p. 100337. doi: <https://doi.org/10.1016/j.foohum.2024.100337>.
- Adhi Putri, I. G. A. A. S. *et al.* (2021) 'Potensi Permainan Papan Edukasi Aktif Kutus PHBS Sebagai Modalitas Pencegahan Obesitas Anak', *Jurnal Ilmiah Kesehatan Sandi Husada*,

- 10(1), pp. 139–146. doi: <https://doi.org/10.35816/jiskh.v10i1.545>.
- Alsharairi, N. A. and Li, L. (2024) ‘Social marketing targeting healthy eating and physical activity in young adult university students: A scoping review’, *Heliyon*, 10(11), p. e31930. doi: <https://doi.org/10.1016/j.heliyon.2024.e31930>.
- Alzaben, A. S. *et al.* (2023) ‘The influence of a diabetes awareness program on diabetes knowledge, risk perception, and practices among university students’, *Primary Care Diabetes*, 17(4), pp. 327–333. doi: <https://doi.org/10.1016/j.pcd.2023.04.011>.
- Arda, D., Lalla, N. N. L. N. and Suprpto, S. (2023) ‘Analysis of the Effect of Malnutrition Status on Toddlers’, *Jurnal Ilmiah Kesehatan Sandi Husada*, 12(1), pp. 111–116. doi: <https://doi.org/10.35816/jiskh.v12i1.910>.
- Baul, T. *et al.* (2024) ‘Improving smallholder agriculture via video-based group extension’, *Journal of Development Economics*, 169, p. 103267. doi: <https://doi.org/10.1016/j.jdeveco.2024.103267>.
- Beleites, F. *et al.* (2024) ‘Evaluating the impact of short animated videos on COVID-19 vaccine hesitancy: An online randomized controlled trial’, *Internet Interventions*, 35, p. 100694. doi: <https://doi.org/10.1016/j.invent.2023.100694>.
- Boone, G. *et al.* (2023) ‘Evaluating video telemedicine for providing virtual health care for cats via mock spay recheck examinations’, *Applied Animal Behaviour Science*, 267, p. 106061. doi: <https://doi.org/10.1016/j.applanim.2023.106061>.
- Chwyl, C. *et al.* (2024) ‘“Mindset Matters”: Perseverance, a balanced approach and structured support as facilitators of whole foods plant-based adoption’, *Appetite*, 194, p. 107163. doi: <https://doi.org/10.1016/j.appet.2023.107163>.
- Cox, L. and Piatkowski, T. (2024) ‘Influencers and “brain building” smart drugs: A content analysis of services and market activities of nootropic influencers over social media’, *Performance Enhancement & Health*, p. 100289. doi: <https://doi.org/10.1016/j.peh.2024.100289>.
- Dewi, N. U. *et al.* (2023) ‘The combination of nutrition education at school and home visits to improve adolescents’ nutritional literacy and diet quality in food-insecure households in post-disaster area (De-Nulit study): A study protocol of cluster randomized controlled trial (CRC’, *Contemporary Clinical Trials Communications*, 35, p. 101185. doi: <https://doi.org/10.1016/j.conctc.2023.101185>.
- Duarte, C. K. *et al.* (2024) ‘Barriers and facilitators to nutritional recommendations identified by participants of a cardiovascular rehabilitation program in a low resource context in Brazil’, *Nutrition*, 124, p. 112451. doi: <https://doi.org/10.1016/j.nut.2024.112451>.
- González-Serrano, M. H. *et al.* (2024) ‘Information management in social media to promote engagement and physical activity behavior’, *International Journal of Information Management*, 78, p. 102803. doi: <https://doi.org/10.1016/j.ijinfomgt.2024.102803>.
- Izadi, B. and Moradi, Z. (2024) ‘Examining school nutrition policies and their effect on the promotion of low-nutrient foods in the context of sports advertising’, *Nutrition*, 123, p. 112392. doi: <https://doi.org/10.1016/j.nut.2024.112392>.
- Kobilke, L. and Markiewitz, A. (2024) ‘Understanding youth participation in social media challenges: A scoping review of definitions, typologies, and theoretical perspectives’, *Computers in Human Behavior*, 157, p. 108265. doi: <https://doi.org/10.1016/j.chb.2024.108265>.
- Litvin, K. *et al.* (2024) ‘How Do Social and Behavioral Change Interventions Respond to Social Norms to Improve Women’s Diets in Low- and Middle-Income Countries? A Scoping Review’, *Current Developments in Nutrition*, 8(6), p. 103772. doi: <https://doi.org/10.1016/j.cdnut.2024.103772>.
- Luthans, F. *et al.* (2024) ‘Psychological, physical, and social capitals: A balanced approach for

- more effective human capital in today's organizations and life', *Organizational Dynamics*, p. 101080. doi: <https://doi.org/10.1016/j.orgdyn.2024.101080>.
- Metallinos-Katsaras, E. and Beto, J. (2024) 'Survey Methodology for Data Collection and Analysis in Nutrition and Dietetics Research', *Journal of the Academy of Nutrition and Dietetics*. doi: <https://doi.org/10.1016/j.jand.2024.06.002>.
- Miller, S. T. *et al.* (2023) 'SISTER (Sisters Inspiring Sisters to Engage in Relevant Diabetes Self-Care) Diabetes Study: Protocol for diabetes medical nutrition therapy randomized clinical trial among African American women', *Contemporary Clinical Trials*, 125, p. 107052. doi: <https://doi.org/10.1016/j.cct.2022.107052>.
- Molina, C. N. *et al.* (2024) 'Exploring consumers' perceptions and biases on eating behaviors and sport nutrition: A twitter perspective', *Food and Humanity*, 2, p. 100286. doi: <https://doi.org/10.1016/j.foohum.2024.100286>.
- Moody, E. *et al.* (2024) 'Nursing interventions to improve care of people living with dementia in hospital: A mixed methods systematic review', *International Journal of Nursing Studies*, 158, p. 104838. doi: <https://doi.org/10.1016/j.ijnurstu.2024.104838>.
- Morgan-Bathke, M. *et al.* (2023) 'Medical Nutrition Therapy Interventions Provided by Dietitians for Adult Overweight and Obesity Management: An Academy of Nutrition and Dietetics Evidence-Based Practice Guideline', *Journal of the Academy of Nutrition and Dietetics*, 123(3), pp. 520-545.e10. doi: <https://doi.org/10.1016/j.jand.2022.11.014>.
- van de Put, M. *et al.* (2024) 'Rationale and design of a randomized placebo-controlled nutritional trial embracing a citizen science approach', *Nutrition Research*. doi: <https://doi.org/10.1016/j.nutres.2024.07.008>.
- Robinson, J. *et al.* (2023) 'Nutrition and Physical Activity Interventions Provided by Nutrition and Exercise Practitioners for the General Population: An Evidence-Based Practice Guideline From the Academy of Nutrition and Dietetics and American Council on Exercise', *Journal of the Academy of Nutrition and Dietetics*, 123(8), pp. 1215-1237.e5. doi: <https://doi.org/10.1016/j.jand.2023.04.004>.
- Sandhu, R. K. *et al.* (2023) 'Unfolding the popularity of video conferencing apps – A privacy calculus perspective', *International Journal of Information Management*, 68, p. 102569. doi: <https://doi.org/10.1016/j.ijinfomgt.2022.102569>.
- Suprpto, S. (2022) 'Pengaruh Edukasi Media Kartun Terhadap Peningkatan Pengetahuan Ibu dan Status Gizi Anak', *Journal of Health (JoH)*, 9(2), pp. 81–87. doi: <https://doi.org/10.30590/joh.v9n2.500>.
- Urbanelli, A. *et al.* (2024) 'The ERMES chatbot: A conversational communication tool for improved emergency management and disaster risk reduction', *International Journal of Disaster Risk Reduction*, 112, p. 104792. doi: <https://doi.org/10.1016/j.ijdrr.2024.104792>.
- Wu, Q. *et al.* (2023) 'The effectiveness of a WeChat-based self-assessment with a tailored feedback report on improving complementary feeding and movement behaviour of children aged 6–20 months in rural China: a cluster randomized controlled trial', *The Lancet Regional Health - Western Pacific*, 37, p. 100796. doi: <https://doi.org/10.1016/j.lanwpc.2023.100796>.

**How to cite this article:** Asmi, A. S., Tyarini, I., Saputra, M. K., Putra, J. and Son, H. (2024) "Video media is more effective to improve balanced nutrition knowledge", *Jurnal Ilmiah Kesehatan Sandi Husada*, 13(2), pp. 242-249. doi: 10.35816/jiskh.v13i2.1210.