

Original Article

## The Influence of Social Media-Based Nutrition Education on Adolescents' Nutritional Knowledge and Body Image Perceptions

Ansar<sup>1\*</sup>, Diah Ayu Hartini<sup>1</sup>, Bahja<sup>1</sup>, Elvyrah Faisal<sup>1</sup>, Nikmah Utami Dewi<sup>2</sup>,  
Ummu Aiman<sup>2</sup>

<sup>1</sup> Department of Nutrition, Poltekkes Kemenkes Palu, Central Sulawesi, Indonesia

<sup>2</sup> Department of Nutrition, Universitas Tadulako, Central Sulawesi, Indonesia

\*(Correspondence author email: [ansar.mursaha@gmail.com](mailto:ansar.mursaha@gmail.com))

### ABSTRACT

Adolescents are a group vulnerable to nutritional problems due to their ongoing growth phase. A lack of nutritional knowledge and poor body image perception can negatively impact their nutritional status. Nutrition education is essential to enhance adolescents' knowledge, shaping healthy attitudes and behaviors regarding diet and other factors influencing food choices. This study utilized WhatsApp as an educational media platform. This study aimed to analyze the effect of social media-based nutrition education on adolescents' nutritional knowledge and body image perceptions. This descriptive research employed a quasi-experimental approach with a one-group pre-test and post-test design. The study was conducted in high schools in Palu City, Central Sulawesi, from January to June 2024. Data collected included respondent characteristics, knowledge levels, and body image perceptions. Data collection involved administering a nutrition knowledge questionnaire and assessing body image perception using the Figure Rating Scale (FRS). The data were analyzed using a paired sample *t*-test. The results revealed a significant effect of social media-based nutrition education on both adolescents' nutritional knowledge and body image perceptions, with a significance value of  $p < 0.05$ . There was a 61% increase in the percentage of adolescents with sufficient knowledge. Additionally, there was a 25% increase in the number of adolescents satisfied with their body shape.

**Keywords:** nutrition education; nutritional knowledge; body image; adolescents; social media.

<https://doi.org/10.33860/jik.v18i2.3976>



© 2024 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY SA) license (<https://creativecommons.org/licenses/by-sa/4.0/>).

### INTRODUCTION

Adolescence is the transitional period from childhood to adulthood, marked by the development of all aspects or functions needed to enter maturity<sup>1</sup>. Adolescents are a group vulnerable to nutritional problems because they are still growing. During this phase, they experience a second rapid growth spurt, followed by a decline in physical growth as they transition into young adulthood. Therefore, adolescents require adequate nutrition not only in terms of quantity but also

quality. The more varied and diverse the food consumed, the better the chance of meeting their nutritional needs, which subsequently impacts their nutritional and health status.

Meeting nutritional needs during adolescence is crucial due to the increased demand for nutrients to support growth and physical as well as mental development. According to the Indonesian Ministry of Health, common nutritional problems among adolescents today include anemia, stunting, chronic energy deficiency (CED), and

overweight or obesity. Nutritional issues during adolescence can have negative consequences, such as reduced concentration in learning, an increased risk of giving birth to low birth weight (LBW) babies, and declining health conditions.<sup>2</sup>

A lack of nutritional knowledge and poor body image perception can affect nutritional status. According to Florence (2017), lower levels of knowledge are associated with poorer body image perceptions. Adolescents with limited nutritional knowledge are more likely to have either underweight or overweight status<sup>3</sup>. Research by Fajri et al. (2014) and Widiarti and Candra (2012) indicates that female adolescents with negative body image are more likely to have poor or excessive nutritional status.<sup>4,5</sup> Individuals with a negative body perception often feel their bodies are unattractive, experience shame, and lack confidence. This negative body image can influence a teenager's eating habits<sup>6</sup>.

Nutritional knowledge refers to an individual's understanding of the balanced nutrition needed by the body to maintain optimal health<sup>7</sup>. People with good nutritional knowledge are expected to have better nutrient intake. One of the causes of nutritional problems and shifts in eating habits during adolescence is a lack of nutritional knowledge<sup>8</sup>. Nutritional knowledge and body image are key factors that influence eating behavior.<sup>9</sup>

According to Fasli Jalal (2010), nutrition education is a continuous process aimed at increasing knowledge about nutrition, shaping healthy attitudes and behaviors by focusing on daily eating patterns and other factors affecting food, and improving a person's overall health and nutrition. The purpose of nutrition education is to encourage positive behavior changes related to food and nutrition.<sup>10</sup> Social media platforms, such as Instagram and Facebook, are popular educational tools among adolescents. The captivating audio-visual elements, including images, videos, and accompanying music, make these platforms particularly attractive to teenagers. Based on the description above, this study, through a quantitative approach, aims to determine the effect of social media-based nutrition education on adolescents' nutritional knowledge and body image perceptions.

## METHODS

This study used a descriptive research type with a quasi-experimental approach, specifically a one-group design with pre-test and post-test, to determine the effect of social media-based nutrition education on adolescents' nutritional knowledge and body image perceptions.

The research was conducted at SMA Negeri 5 and SMA Negeri 7 Palu from January to June 2024, involving a total of 100 respondents, determined through the following sample calculation:

$$n = \frac{Z\alpha^2 PQ}{d^2}$$

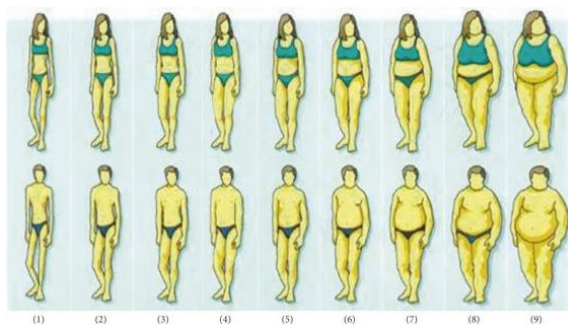
$$n = \frac{1,96^2 0,5 \times 0,5}{0,1^2}$$

$$n = 96,04$$

Based on the formula, a total sample size of 96 participants was calculated. However, to minimize the potential for error in the data, the research sample was increased to 100 participants.

Social media-based nutrition education refers to providing information related to balanced nutrition and promoting a positive body image through social media platforms such as Instagram and Facebook, targeting adolescents aged 15-18 years. Nutrition knowledge is measured by the respondents' ability to correctly answer questions about balanced nutrition before and after receiving the education. Knowledge is categorized as "sufficient" if the score is  $> 60$ , and "insufficient" if the score is  $\leq 60$ .

Body image refers to an individual's perception, feelings, attitudes, and evaluation of their own body, including body shape, size, and weight, which relate to physical appearance. Body image was measured using the Figure Rating Scale (FRS) method by comparing the ideal body shape to the current body shape, as shown in Figure 1. The body image category is defined as "satisfied" if the ideal body image matches the current body image, and "dissatisfied" if the ideal body image does not match the current body image.



**Figure 1 . Figure Rating Scale (FRS)**

The data in this study consists of primary and secondary data. The primary data includes respondent characteristics, knowledge, and body image perception, collected through questionnaires administered before and after the educational intervention via social media. The social media platform used in this study was the WhatsApp application. The secondary data includes information on the number of students. Data collection was conducted by having participants complete the questionnaire and measuring the adolescents' nutritional status. The collected data were then analyzed using the paired sample t-test statistical method.

This research has received ethical approval from the Research Ethics Committee of the Palu Ministry of Health Polytechnic, with the approval number 000376/KEPK POLTEKKES KEMENKES PALU/2024. Additionally, the Central Sulawesi Provincial Government, through the National Unity and Regional Politics Agency, has also approved this research by issuing Research Certificate Number 070/0560/BID.III-BKBPD/2024.

## RESULTS

Respondent characteristic data is presented in Table 1, which includes the age, gender, and school of origin of the adolescents. The age range of the participants is between 15 and 18 years, with the highest percentage at 17 years (45%) and the lowest at 15 years (3%). The majority of respondents are female (66%), and the largest group is in class XI (71%). The distribution of respondents among the two schools is uneven, with the highest number of participants from SMA Negeri 7 Palu (68%).

**Table 1. Respondent Characteristics Data**

Respondent Characteristics (n=100)	n	%
<b>Age (years)</b>		
15	3	3.0
16	43	43.0
17	45	45.0
18	9	9.0
<b>Gender</b>		
Male	34	34.0
Female	66	66.0
<b>Class</b>		
X	29	29.0
XI	71	71.0
<b>School</b>		
State Senior High School 5 Palu	32	32.0
State Senior High School 7 Palu	68	68.0

The effect of nutrition education on knowledge and body image is presented in Table 2. The results of the pre-test showed that most respondents fell into the "less" category for knowledge (68%) and into the "dissatisfied" category for body image (82%). After the educational intervention, the results of the post-test indicated that the majority of respondents moved into the "sufficient" category for knowledge (93%). However, for the body image variable, the majority of post-test results still remained in the "dissatisfied" category (57%).

**Table 2.** The Influence of Social Media-Based Nutrition Education on Adolescents' Knowledge and Body Image

Variables	Pre Test		Post Test		p-value
	n	%	n	%	
<b>Knowledge</b>					
Enough	32	32	93	93	<b>0.001</b>
Not enough	68	68	7	7	
<b>Body Image</b>					
Satisfied	18	18	43	43	<b>0.001</b>
Not satisfied	82	82	57	57	
<b>Total</b>	100	100	100	100	

The value p for the influence of nutritional education was analyzed using a paired t-test. The comparison results showed values of  $p < 0.05$ , indicating statistical significance. Important values are highlighted in bold.

## DISCUSSION

The respondents in this study were high school students categorized as adolescents

aged 15–18 years. The most common age was 17 years (45%), which aligns with the highest class category, class XI (71%). Respondents from classes X and XI were selected because class XII was preparing for the national exam, and thus, the research team chose not to include them. According to the World Health Organization (WHO, 2024), the adolescent age range is 10–19 years, while the ages of the high school students in this study ranged from 15–19 years. The regulation regarding the age for entering high school is outlined in the Ministerial Regulation No. 20 of 2016 concerning Competency Standards for Graduates of Primary and Secondary Education, which states that high school begins after completing basic education (typically around the age of 15) and continues until students are around 18 years old (Kemendikbud, 2016).

The respondents in this study were predominantly female (66%). There were more respondents from SMA Negeri 7 compared to SMA Negeri 5, due to the timing of the study, which coincided with the quiet week following school exams, leading to uncertain student attendance in some schools.

Nutrition education was delivered through the WhatsApp application, with additional materials provided via a PowerPoint presentation. Before the education was carried out, a pre-test was administered to assess the students' knowledge regarding nutrition and body image. The pre-test results showed that only 32% of the adolescents had sufficient nutritional knowledge. After the nutrition education was given, the knowledge of adolescents increased by 61%, with 93% falling into the sufficient category. The paired t-test results showed a significant effect of nutrition education on adolescent knowledge, as indicated by the increase in knowledge scores.

The findings of this study align with research conducted in Purworejo, which demonstrated a significant effect of health education using video and poster media on respondents' knowledge and attitudes<sup>11</sup>. Similarly, a study in Padang found that providing nutrition education through Instagram significantly increased knowledge about balanced nutrition among adolescent girls to prevent anemia<sup>12</sup>. Instagram allows researchers to share educational content through engaging short videos. Meanwhile, the

WhatsApp application enables sharing not only videos but also files such as PDFs or PowerPoint presentations. A literature review on creative media for nutrition education also revealed that using audiovisual media as a creative tool for education successfully increased respondents' nutritional knowledge.<sup>13</sup>

The body image variable in this study was categorized into "satisfied" and "dissatisfied." The results showed that only 18% of the adolescents were satisfied with their body image before the education. After the education, the proportion of adolescents satisfied with their body image increased to 43%. Although satisfaction with body image did not reach half of all respondents, there was still a 25% improvement.

These results are consistent with a study conducted on adolescents in East Bekasi, which found a significant effect of nutrition education on adolescents' body image perception, with a significance value of 0.00.<sup>14</sup> Another study using website-based media to assess its impact on knowledge and body image perception concluded that nutrition education positively affects knowledge and body image perception in female adolescents.<sup>15</sup>

## CONCLUSIONS

Based on the results of the study, it was found that social media-based nutrition education had a significant influence on both nutritional knowledge and adolescent body image perception, with a significance value of  $p < 0.05$ . There was a 61% increase in the percentage of adolescents with sufficient nutritional knowledge. Similarly, body image perception showed a 25% increase in the category of adolescents being satisfied with their body shape. It is recommended that future research focus on providing training for adolescent *posyandu* cadres on improving nutritional knowledge and fostering positive body image in adolescents.

## ACKNOWLEDGEMENT

This study was supported by a research grant from Poltekkes Kemenkes Palu in 2024. We would like to express our gratitude to all the participants who contributed to this study.

## REFERENCES

1. Rasmussen, K. M., Yaktine, A. L., & Tovar, A. *Nutrition Throughout the Lifecycle: A Public Health Perspective*. 1st ed. New York: National Academies Press; 2021.
2. Harker, L., O'Reilly, M., & Mistral, W. *Maternal and Child Nutrition: A Global Perspective*. 2nd ed. Oxford: Oxford University Press; 2023.
3. Florence A. Hubungan Pengetahuan Gizi dan Pola Konsumsi dengan Status Gizi pada Mahasiswa TPB Sekolah Bisnis dan Manajemen Institut Teknologi Bandung. 2017.
4. Fajri K A, Febry F, Mutahar R. Gambaran Citra Tubuh dan Faktor-Faktor yang Berhubungan terhadap Status Gizi Remaja Putri SMAN 17 Palembang dan SMA Nurul Iman Palembang. *Jurnal Ilmu Kesehatan Masyarakat*. 2014;5(2):27–33.
5. N W, K A C. Hubungan Antara Body Image dan Perilaku Makan dengan Status Gizi Remaja Putri di SMA Theresiana Semarang. *Journal of Nutrition College*. 2012;1(1):398–404.
6. Syifa RSA, Pusparini P. Persepsi tubuh negatif meningkatkan kejadian eating disorders pada remaja usia 15-19 tahun. *Jurnal Biomedika dan Kesehatan*. 2018 Jun 29;1(1):18–25.
7. Anjani RP. Perbedaan Pengetahuan Gizi, Sikap Dan Asupan Zat Gizi Pada Dewasa Awal. 2013.
8. Notoatmodjo S. Pendidikan dan Perilaku Kesehatan. Jakarta: Rineka Cipta; 2003.
9. Nurmalia S. Pengetahuan Gizi, Body image, Dan Status Gizi Remaja Islam Athirah Kota Makassar Tahun 2013. Universitas Hasanuddin; 2013.
10. Supariasa IDN. Pendidikan dan Konsultasi Gizi. Jakarta: Penerbit Buku Kedokteran EGC; 2011.
11. Ramadhanti FM, Sulistyowati E, Jaelani M. Pengaruh edukasi gizi dengan media video motion graphics terhadap pengetahuan dan sikap tentang obesitas remaja. *Jurnal Gizi*. 2022;11(1):22–31.
12. Rusdi FY, Helmizar H, Rahmy HA. Pengaruh Edukasi Gizi Menggunakan Instagram Terhadap Perubahan Perilaku Gizi Seimbang Untuk Pencegahan Anemia Pada Remaja Putri Di Sman 2 Padang. *Journal of Nutrition College*. 2021 May 28;10(1):31–8.
13. Femyliati R, Kurniasari R. Pemanfaatan Media Kreatif Untuk Edukasi Gizi Pada Remaja (Literature Review). *Hearty*. 2021 Dec 14;10(1):16.
14. Putri NA, Aminah S. Pengaruh Pendidikan Gizi dengan Video Animasi Terhadap Persepsi Body Image Remaja di SMK Al-Muhadjirin 2 Kesehatan Bekasi Timur Tahun 2022. *Jurnal Pendidikan dan Konseling (JPDK)* [Internet]. 2022 Jul 14;4(4):1003–9. Available from: <http://journal.universitaspahlawan.ac.id/index.php/jpdk/article/view/5374>
15. Ardhyarini AA, Aminah M, Mutiyani M, Agung F. Pengaruh Pendidikan Gizi Melalui Media Website Terhadap Pengetahuan Gizi Dan Persepsi Body Image Pada Remaja Putri Di Sma Santa Maria 3 Cimahi. *Politeknik Kesehatan Kemenkes Bandung*. 2020;
16. Alima, Y., & Setyaningsih, W. The effectiveness of social media in delivering nutritional education to adolescents: A systematic review. *Nutritional Health*, 17(2), 102–115. <https://doi.org/10.1177/14765276221082745>; 2023.
17. Muliati, Y., & Rizki, R. Perceptions of body image and its association with eating behavior among adolescents: A study in urban Indonesia. *Indonesian Journal of Public Health*, 18(1), 70–79. <https://doi.org/10.22435/ijph.v18i1.4844>; 2023.
18. Kristiana, D. S., & Pradita, F. The role of nutrition education in shaping adolescent health behavior: Evidence from a community-based program. *Journal of Community Health*, 48(3), 598–606. <https://doi.org/10.1007/s10900-022-01159-5>; 2023.
19. Mahmudah, A., & Tjipto, A. Social media interventions for improving nutritional knowledge among adolescents: A review of current practices. *BMC Public Health*, 23(1), 456. <https://doi.org/10.1186/s12889-023-15585-4>; 2023.
20. Lestari, N., & Astuti, R. Body image and its impact on eating disorders among adolescents: A review of literature. *Asian Journal of Psychiatry*, 75, 103172. <https://doi.org/10.1016/j.ajp.2022.103172>; 2023.