

The Use Of Visual Media To Improve Understanding Of Balanced Nutrition In Elementary School Children: A Systematic Literature Review

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ABSTRACT

ABSTRACT Balanced nutrition was a crucial foundation in supporting the optimal growth and development of elementary school-aged children. In Indonesia, challenges related to malnutrition and hidden hunger remained serious issues that affected the quality of life of future generations. School-aged children tended to become more independent in choosing their food; however, their limited understanding of nutrition often led to unhealthy choices. Therefore, nutrition education became an urgent need and had to be presented through engaging and easily understandable approaches. This article aims to systematically review the effectiveness of visual media in improving students' understanding of balanced nutrition in on elementary schools' students in Indonesia. The method used was a Systematic Literature Review (SLR) based on the PRISMA approach. Literature searches were conducted through the Google Scholar database using keywords such as "visual media," "balanced nutrition," and "elementary school students," limited to SINTA-accredited journal publications from 2020 to 2025. Eight selected articles were analyzed. The findings showed that visual media such as comics, board games, posters, puzzles, and picture books were effective in increasing students' knowledge and attitudes toward healthy food consumption. Strengthening nutrition literacy through visual media directly contributed to the achievement of the Sustainable Development Goals (SDGs), particularly SDG 2 (Zero Hunger) and SDG 3 (Good Health and Well-being), by preventing malnutrition and promoting healthy eating habits from an early age. This article provided recommendations for the development of more engaging, participatory, and sustainable nutrition education strategies in elementary schools.

Keywords: Visual media, balanced nutrition, nutrition literacy, SDGs

18 Introduction

A balanced diet is a daily food intake that contains nutrients in types and amounts appropriate to the body's needs to support optimal biological functions [1]. Meeting balanced nutritional needs from elementary school age onwards is an important foundation for optimal physical growth, cognitive development, and long-term health [2]. However, in Indonesia, malnutrition and hidden hunger remain serious issues. UNICEF reported in 2022 that approximately 50–59 percent of Indonesian children experience growth disorders due to micronutrient deficiencies that are not immediately apparent but have a significant impact on future productivity and quality of life [3]. This is because, upon entering school, children begin to show independence in choosing their food. The abundance of instant snacks and packaged foods in their surroundings means that children no longer rely entirely on the healthy food provided at home. This situation often leads to neglect of children's nutrition, as parents assume that children are capable of choosing their own food [4]. However, nutrition education for children is necessary to help them make wiser choices when selecting daily snacks.

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Nutrition education for school-aged children aims to encourage the development of balanced food consumption habits from an early age. The implementation of nutrition education in formal educational settings plays a crucial role in enhancing knowledge, fostering positive attitudes, and promoting the selection of healthy and balanced foods. One approach considered effective for improving the success of nutrition education is the use of visual media [1]. Visual media such as posters, booklets, infographics, and educational videos have been proven to attract students' attention, simplify the understanding of complex nutrition concepts, and improve information retention [5]. Research conducted in several elementary schools in Indonesia shows that the use of visual media in nutrition education significantly improves knowledge and influences changes in children's eating behavior [6].

Efforts to improve nutrition literacy from elementary school age directly support the achievement of Sustainable Development Goal (SDG) number 2: Zero Hunger, which aims to end all forms of hunger and malnutrition by 2030 through increased access to nutritious food for children [7]. Additionally, visual media-based educational interventions aimed at instilling healthy eating habits align with SDG 3: Good Health and Well-being, which emphasizes the importance of ensuring healthy lives and promoting well-being at all ages, including through the promotion of good nutrition as a preventive strategy for non-communicable diseases [8]. Therefore, the development of educational approaches that are engaging, adaptive, and evidence-based, such as visual media, is a strategic step in supporting SDG targets in the education and health sectors.

Based on this background, this article aims to systematically review various studies in Indonesia related to the effectiveness of using visual media in improving understanding of balanced nutrition among elementary school children. This review is expected to serve as a reference in developing more effective and sustainable nutrition education strategies in school environments. Although a number of studies have discussed the importance of nutrition education at the elementary school level, studies that specifically analyze the use of visual media in the context of nutrition education in Indonesia are still relatively limited. Therefore, this article offers a new contribution by presenting a systematic synthesis of various research findings, thereby enriching the literature and practice of visual media-based nutrition education in Indonesia.

19 Research Methods

This study applied the Systematic Literature Review (SLR) method as the main approach. SLR is part of qualitative methodology designed to collect, select, and synthesize scientific findings in a structured and transparent manner. This process was carried out by searching scientific articles based on predetermined inclusion and exclusion criteria [9].

All data in this study were obtained through literature review. The literature analyzed included scientific publications in the form of journal articles relevant to the theme of balanced nutrition education through the use of visual media in elementary school children. Data analysis was conducted using a descriptive approach, namely through the process of classifying and grouping the findings from the selected literature, which were then interpreted in accordance with the focus and objectives of the study.

This study used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) approach through the stages of Identification, Screening, Eligibility, and Inclusion [10]. To complement this study, the researcher analyzed the Google Scholar or Google Cendikia database by searching for scientific article publications over the past six years (2020–2025). Journal articles were searched on the website <https://scholar.google.com/>. The research was conducted in April 2025 using the keywords “visual media,” “balanced nutrition,” and “elementary school students,” then selecting and retrieving articles relevant to those keywords and

meeting the established criteria. The following are the inclusion criteria for article searches on Google Scholar:

1. Research articles containing the keywords visual media, balanced nutrition, and elementary school students.
2. Publications within the last five years (2020–2025).
3. Journal articles (not theses or dissertations).
4. Accredited by the Science and Technology Index (SINTA).
5. Articles written in English and Indonesian, with full text and accessible.

The article selection process based on inclusion criteria and the PRISMA approach is shown in Figure 2 as follows.



Figure 6: Planting matoa trees at MTsM Kaluarrang, Gowa

20 Result and Discussion

In this study, the literature exploration was conducted in accordance with the SLR research stages, which consist of four stages. A total of eight articles were selected for analysis on the effectiveness of visual media in promoting balanced nutrition among elementary school children. The results of the literature search related to the research theme in the Google Scholar database provide a clearer picture of the research results in the form of tables, graphs, and discussions. Articles related to this research theme have seen an annual increase in publications, from 2020 to 2025, as shown in Figure 2.

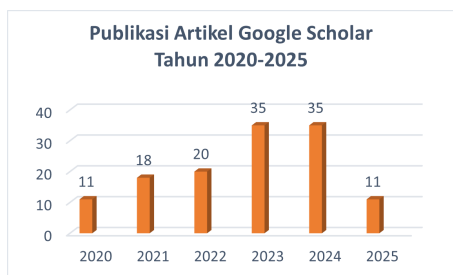


Figure 7: Planting matoa trees at MTsM Kaluarrang, Gowa

The number of articles published with the keywords “visual media,” “balanced nutrition,” and “elementary school students” in the Google Scholar database is shown in the diagram above. In 2020, there were 11 articles with related keywords, increasing to 18 articles in 2021. In 2022, the number increased to 20 articles, and in 2023, there were 2023 articles. In 2024, the number of articles remained the same as the previous year, at 35 articles. By April 2025, there were 11 articles recorded. The summary of the articles reviewed can be seen in Table 1.

Table 5: Summary of Articles Reviewed

No.	Title, Year, and Author of the Article	Journal Name	Types of Visual Media	Research Results
1	<i>Pengaruh Media Komik Terhadap Pengetahuan Tentang Makanan Jajanan Sehat Pada Anak Berusia 9–12 Tahun</i> (Cinta, 2023)	<i>Jurnal Pengabdian Masyarakat</i> (SINTA 3)	Comic	Nutrition education using comic books can improve students' knowledge of choosing healthy snacks.
2	<i>Edukasi Komik Isi Piringku Pada Anak SD Overweight</i> (Dewi & Wahyuningish, 2021)	<i>Jurnal GIZIDO</i> (SINTA 3)	Comic	My plate comic strip has been shown to reduce energy levels in elementary school students who are overweight.
3	<i>Pengaruh Edukasi Gizi Menggunakan Komik Terhadap Tingkat Pengetahuan Mengenai Makanan Sehat Pada Anak Sekolah (Studi Pada Siswa Kelas V SD Mojo III Surabaya)</i> (Maharani & Mahmudiono, 2023)	<i>Jurnal Kesehatan Lingkungan</i> (SINTA 5)	Comic	There was a difference in students' knowledge about healthy snacks before and after receiving nutrition education using comic books as a medium.
4	<i>Media Ular Tangga Sebagai Sarana Edukasi Gizi Dalam Upaya Peningkatan Pengetahuan Gizi Pada Anak</i> (Kosasih & Hasan, 2023)	<i>Jurnal Masyarakat Mandiri</i> (SINTA 3)	Snake and ladder board	The snake and ladder game is interesting and has a positive impact on improving students' nutritional knowledge, as seen from the increase in the number of questions asked.
5	<i>Pengaruh Media Edukasi Nutri Case ULTAJAS (Ular Tangga Makanan Sehat) Terhadap Pengetahuan dan Sikap Konsumsi Makanan Sehat Siswa Kelas V SDN 101566 Batang Kuis</i> (Syahdiah et al., 2021)	<i>Jurnal Gizi dan Kesehatan</i> (SINTA 5)	Snake and ladder board	There is an influence of educational media on knowledge and attitudes in choosing and consuming healthy snacks.

Table 5 (continued): Summary of Articles Reviewed

No.	Title, Year, and Author of the Article	Journal Name	Types of Visual Media	Research Results
6	<i>Pendidikan Gizi Seimbang untuk Mencegah Stunting Menggunakan Media Video dan Poster Pada Murid Sekolah Dasar di SDIT Al Wahda Kendari</i> (Effendy et al., 2022)	<i>Jurnal Karya Kesehatan Journal of Community Engagement</i> (SINTA 5)	Poster	Education using posters can improve students' literacy regarding stunting and balanced nutrition consumption patterns to prevent stunting.
7	<i>Puzzle Gizi Sebagai Upaya Edukasi Terhadap Perilaku Gizi Seimbang Pada Siswa</i> (Naufion & Naufiton, 2020)	<i>Jurnal Media Kesehatan Masyarakat Indonesia</i> (SINTA 1)	Puzzle	Health education uses nutritional puzzle games as an effective medium to improve students' knowledge, attitudes, and actions toward balanced nutrition.
8	<i>Pengembangan Media Edukasi Gizi Buku Bergambar Untuk Meningkatkan Pengetahuan, Sikap, dan Praktik Gizi Seimbang Siswa Sekolah Dasar</i> (Naisy & Ririkarni, 2024)	<i>Jurnal Media Riset Politeknik Kesehatan Makassar</i> (SINTA 4)	Picture Book	Nutrition education media is well received by elementary school students and can improve knowledge of balanced nutrition but has little effect on balanced nutrition practices and attitudes.

Based on the analysis of the eight articles, several key findings were obtained, as follows:

1. Research on the effectiveness of using visual media to improve nutrition understanding among elementary school children is still scarce in the period 2020-2025.
2. The use of visual media such as comics, snakes and ladders, posters, puzzles, and picture books is consistently effective in improving elementary school students' knowledge of healthy snacks, nutrition understanding, and positive attitudes toward choosing healthy foods. These media also contribute to improving consumption patterns and enhancing students' knowledge, attitudes, and actions toward balanced nutrition.
3. The use of visual media in elementary schools received positive feedback from students and teachers and was deemed suitable for balanced nutrition education for elementary school students.

Research by Nita (2023) [11] shows that healthy snack education using comic media can improve students' understanding and attitudes in choosing snacks. Similar results were shown by Darni & Wahyuningsih (2021) [12], who found that comic media was effective in reducing energy intake in students with better nutritional status. Results of research by Maharani & Mahmudiono (2024) [13] also reported from significant differences between before and after comic-based education on healthy snack selection. The use of snakes and ladders media in Korompis & Hasan (2023) [14] and Syahfitri et al. (2025) [15] studies was proven to enhance nutritional knowledge and the ability to select and consume healthy snacks. Effendy et al. (2022)

[16] developed educational media to improve students' literacy about stunting and balanced nutrition consumption, while in the study by Nasution & Nasution (2020)[17], they showed that puzzle media can improve knowledge, attitudes, and actions toward balanced nutrition. Finally, research by Naqli & Rizkiriani (2024) [18] found that picture books are effective in improving knowledge about balanced nutrition, although their impact on practices and attitudes is not yet significant.

21 Conclusion

Based on the results of a systematic review of eight selected articles, it can be concluded that the use of visual media such as comics, snakes and ladders games, posters, puzzles, and picture books has been proven effective in improving elementary school students' understanding of the concept of balanced nutrition. These visual media not only reinforce children's knowledge and attitudes toward the use of healthy foods but also increase their activity and enthusiasm in learning. Although surveys on this topic are still limited to the 2020–2025 period, consistent findings indicate that visual media are educational tools worthy of use in nutrition education for elementary school children. The positive perceptions of teachers and children suggest that visual strategies have the potential to convey nutrition messages in a more engaging and easily understandable manner, thereby supporting efforts to improve early nutrition literacy.

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