



## THE INFLUENCE OF COMIC BOOK MEDIA ON CHILDREN'S KNOWLEDGE AND ATTITUDES TOWARD FRUIT AND VEGETABLE CONSUMPTION AT SDIT IQRA 1 BENGKULU CITY

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### Abstract

Elementary school children are in a period of rapid growth (growth spurt) and therefore require a balanced nutritional intake that includes fruits and vegetables. Lack of fruit and vegetable consumption can lead to nutritional problems such as obesity. This study aimed to determine the effect of comic book media on children's knowledge and attitudes toward fruit and vegetable consumption at SDIT IQRA 1 Bengkulu City. A quantitative, pre-experimental design using a One Group Pretest and Posttest was employed. The study population consisted of 117 fourth-grade students at SDIT IQRA 1 Bengkulu City, with a sample of 34 students selected through simple random sampling. A questionnaire was administered before and after the intervention, and the data were analyzed using the Wilcoxon Signed Rank Test. Results showed an increase in the mean knowledge score from 56.35 to 96.03 and an increase in the mean attitude score from 28.41 to 37.44 after the comic book intervention. The statistical test revealed  $\Delta$  mean values of 39.68 for knowledge and 13.36 for attitude, with a  $p$ -value = 0.000, indicating a significant effect of comic book media on improving students' knowledge and attitudes regarding fruit and vegetable consumption. In conclusion, there was a significant increase in students' knowledge and attitudes toward fruit and vegetable consumption following the comic book intervention, suggesting that comic book media significantly influences improvements in knowledge and attitudes about fruit and vegetable consumption.

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## INTRODUCTION

Elementary school children are in a period of rapid growth (growth spurt) that requires a balanced nutritional intake, including sufficient consumption of fruits and vegetables. Fruit and vegetable consumption plays a crucial role in providing vitamins, minerals, and fiber that help maintain the immune system, support growth and development, and prevent non-communicable diseases such as obesity, constipation, anemia, and diabetes. However, according to the 2023 Indonesian Health Survey, 67.5% of Indonesians consume only 1–2 servings of fruits and vegetables per day, while only 3.4% meet the WHO recommendation of more than five servings per day. In Bengkulu Province, only 2.4% of the population meets this recommendation.

This situation is also reflected in the school environment. Based on the 2024 Bengkulu City Health Office report, SDIT IQRA 1 Bengkulu City recorded the highest prevalence of obesity among schools in the Sawah Lebar Health Center area, reaching 28.44% of total students. This issue is closely related to the low level of children's knowledge and attitudes toward fruit and vegetable consumption, which are influenced by the lack of early nutrition education.

Previous studies have shown that nutrition education interventions mediated through visual media can effectively improve knowledge and shape children's attitudes. One of the most effective educational media for school-age children is comic books. According to Pratiwi et al. (2023), the use of comic media significantly increased students' knowledge about dental health. Similarly, Kaluku et al. (2023) found that nutrition comic media improved students' understanding of balanced diets. Comics can deliver educational messages in a fun, memorable way that suits children's learning characteristics.

This research also refers to Edgar Dale's *Cone of Experience* theory, which states that children understand information more effectively through visual experiences. Comics, as a visual medium, allow children to see, read, and connect images with stories that stimulate imagination and strengthen information retention.

Although many studies have demonstrated the effectiveness of comic media in improving children's health knowledge, research on the effect of comics on knowledge and attitudes toward fruit and vegetable consumption in Bengkulu—particularly at SDIT IQRA 1—is still very limited. Therefore, this study aims to answer the question: "*What is the effect of comic book media on children's knowledge and attitudes regarding fruit and vegetable consumption at SDIT IQRA 1 Bengkulu City?*"

The purpose of this study is to determine the effect of comic book media on the knowledge and attitudes of SDIT IQRA 1 Bengkulu City students toward fruit and vegetable consumption as a preventive effort against nutritional problems and to foster healthy lifestyle habits from an early age.

## MATERIALS AND METHODS

This study employed a quantitative approach with a pre-experimental one-group pretest-posttest design to assess the effectiveness of comic book media in improving students' knowledge and attitudes toward fruit and vegetable consumption. The research was conducted from May to June 2025 at SDIT IQRA 1 Bengkulu City, selected due to its high prevalence of obesity among students.

The population consisted of 117 fourth-grade students, with 34 students randomly selected as samples using a simple random sampling technique. The independent variable was the educational comic book

“Kebun Paman Raden”, while the dependent variables were students’ knowledge and attitudes toward fruit and vegetable consumption. Knowledge was measured using a 15-item multiple-choice questionnaire, and attitudes were assessed using a 10-item four-point Likert scale, both validated by experts.

The research procedure included a pretest, an intervention through interactive comic reading with the class teacher, and a posttest to evaluate changes in knowledge and attitudes. Data were analyzed using SPSS version 25 with the Wilcoxon Signed Rank Test, as the data were not normally distributed.

## RESULTS AND DISCUSSION

### Result

#### *Characteristics of Students at SDIT IQRA 1 Bengkulu City*

Based on Table 1, the characteristics of fourth-grade students at SDIT IQRA 1 Bengkulu City by gender and age show that most of the participants were female, totaling 18 students (52.9%). In terms of age, the majority were 10 years old, totaling 20 students (58.8%).

Table 1. Characteristics of Students at SDIT IQRA 1 Bengkulu City

No	Respondent Characteristic	frequency	Percentage (%)
1	<b>Gender</b>		
	Male	16	47,1
	Female	18	52,9
	<b>Total</b>	34	100
2	<b>Age</b>		
	9	8	23,5
	10	20	58,8
	11	6	17,6
	<b>Total</b>	34	100

#### *Children’s Knowledge Through Comic Book Educational Media*

In this study, the knowledge variable was measured using a questionnaire administered before and after the comic book media intervention on fruit and vegetable consumption among 34 fourth-grade students at SDIT IQRA 1 Bengkulu City. The knowledge variable was assessed using 15 multiple-choice questions (A, B, C, D), with each correct answer scored as 1 and each incorrect answer scored as 0. The frequency distribution of correct answer percentages for knowledge items before and after the comic book educational media intervention on fruit and vegetable consumption is presented in Table.

Table 2. Mean Knowledge Scores Before and After the Comic Book Media Intervention on Children’s Knowledge and Attitudes Toward Fruit and Vegetable Consumption at SDIT IQRA 1 Bengkulu City

Variabel	N	Mean ± SD	Min-Max
Pre-test	34	56.35 ± 11.321	20-80

<i>Post-test</i>	34	96.03 ± 5.452	80-100
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Table 2 shows the results of the univariate analysis, indicating that the mean knowledge score before the comic book media intervention was 56.35 with a standard deviation of 11.321, a minimum score of 20, and a maximum score of 80. After the intervention, the mean knowledge score increased to 96.03 with a standard deviation of 5.452, a minimum score of 80, and a maximum score of 100.

#### *Children's Attitudes Through Comic Book Educational Media*

The attitude variable in this study was measured using a questionnaire administered to 34 fourth-grade students at SDIT IQRA 1 Bengkulu City before and after the comic book media intervention on fruit and vegetable consumption. The measurement indicators for the attitude variable consisted of 10 statements with four response options on a Likert scale: "Strongly Disagree (1)," "Disagree (2)," "Agree (3)," and "Strongly Agree (4)." The frequency distribution of responses to the attitude statements before and after the intervention is presented in Table 3.

Table 3. Mean Attitude Scores Before and After the Comic Book Media Intervention on Children's Knowledge and Attitudes Toward Fruit and Vegetable Consumption at SDIT IQRA 1 Bengkulu City

<b>Variabel</b>	<b>N</b>	<b>Mean ± SD</b>	<b>Min-Max</b>
<i>Pre-test</i>	34	28.41 ± 1.877	25-32
<i>Post-test</i>	34	37.44 ± 1.618	35-40

Based on Table 3, the mean attitude score before the intervention using comic book media was 28.41 with a standard deviation of 1.877, a minimum score of 25, and a maximum score of 32. After the intervention, the mean score increased to 37.44 with a standard deviation of 1.618, a minimum score of 35, and a maximum score of 40.

#### *The Effect of Comic Book Media on Children's Knowledge and Attitudes Toward Fruit and Vegetable Consumption at SDIT IQRA 1 Bengkulu City*

Based on Table 4, the difference in the mean knowledge score was 39.68 with a p-value of 0.000, and the difference in the mean attitude score was 13.36 with a p-value of 0.000, indicating a significant difference before and after the intervention. Therefore, since the p-value < 0.05,  $H_0$  is rejected, which means that the comic book media has a significant effect on children's knowledge and attitudes regarding fruit and vegetable consumption at SDIT IQRA 1 Bengkulu City.

Table 4. Differences in the Mean Knowledge and Attitude Scores of SDIT IQRA 1 Bengkulu City Students Before and After the Comic Book Media Intervention on Fruit and Vegetable Consumption

<b>Variable</b>	<b>Mean</b>	<b>ΔMean</b>	<b>P Value</b>
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	<b>Before</b>	<b>After</b>		
Knowledge	56,35	96,03	39,68	0,000
Attitude	24,08	37,44	13,36	0,000

## Discussion

### *Characteristics of Fourth Grade Students at SDIT IQRA 1 Bengkulu City*

The fourth-grade students participating in this study showed diversity in gender and age. Of the 34 respondents, most were female (18 students or 52.9%), while 16 students (47.1%) were male. In terms of age, the majority were 10 years old (20 students or 58.8%), with the rest aged 9 and 11. This composition represents a typical profile of middle-level elementary school students.

These characteristics may influence the effectiveness of nutrition education through visual media such as comic books. Previous studies (Widayanti et al., 2022; Zulferi et al., 2022) indicate that girls generally have higher awareness of healthy eating and respond better to visual media due to their interest in stories and illustrations. Meanwhile, according to Piaget's cognitive development theory, children around age 10 are in the concrete operational stage, where they begin to understand logical relationships, such as the health benefits of fruits and vegetables.

Research by Prasetyo et al. (2024) and Adi & Permatasari (2024) also highlights that this age is a crucial period for shaping healthy eating habits, as children begin to develop independence in food choices. Therefore, visual educational media like comics are considered highly suitable for this developmental stage.

### *Children's Knowledge through Comic Book Educational Media*

The increase in students' knowledge about fruit and vegetable consumption after the intervention showed significant results. Before receiving education through comic book media, the average knowledge score was 56.35 (min 20, max 80), which rose sharply to 96.03 (min 80, max 100) after the intervention. This indicates that comic book media effectively improved students' understanding.

These findings align with previous studies (Zulaikha et al., 2024; Nuraeni et al., 2021; Kaluku et al., 2023; Nandasari & Al Mufti, 2023), all of which reported notable increases in students' nutrition knowledge through comic-based education. The use of visual and narrative formats makes the learning process more engaging and easier to comprehend for elementary school children. The results also support Edgar Dale's Cone of Experience theory, which emphasizes that visual learning enhances understanding more effectively than text alone. As a visual-narrative medium, comic books simplify complex nutrition concepts into fun and relatable stories for children.

### *Children's Attitude through Comic Book Educational Media*

Students' attitudes toward fruit and vegetable consumption also improved significantly after receiving education through comic book media. The average attitude score increased from 28.41 (range 25–32) before the intervention to 37.44 (range 35–40) afterward, indicating that comic books not only enhanced knowledge but also fostered positive attitudes.

These findings align with studies by Darni & Wahyuningsih (2023), Wulandari & Prameswari (2023), Magrita et al. (2024), and Meriana (2021), which all showed that comic media effectively improved children's attitudes toward nutrition and healthy behaviors. Theoretically, this supports the idea that visual media suited to children's characteristics can effectively shape attitudes. Comics serve not only as informational tools but also as persuasive media that strengthen both cognitive understanding and emotional engagement toward healthy eating habits.

#### *The Effect of Comic Book Media on Children's Knowledge and Attitudes*

The Wilcoxon test results showed a significant effect of comic book media on improving students' knowledge and attitudes toward fruit and vegetable consumption. The mean difference in knowledge scores before and after the intervention was 39.68, and for attitudes 13.03, with both showing  $p = 0.000$  ( $< 0.05$ ). This indicates that the comic book effectively enhanced both knowledge and attitudes among students.

These findings align with previous studies by Darni & Wahyuningsih (2023), Zulaikha et al. (2024), and Sari & Rahmadani (2024), which also demonstrated significant improvements through comic-based education. Similarly, Samsiana & Sulandjari (2023) and Meriana (2021) noted that both printed and digital comics are effective, engaging tools for health promotion in children.

In terms of implications, comic books serve as an innovative and enjoyable educational medium that suits elementary students' visual and narrative learning styles. However, this study has limitations — it involved only one class in one school and was conducted over a short period, so the long-term behavioral effects were not measured. Future research should include a larger sample across multiple schools, employ control groups, and assess actual behavior changes such as post-intervention fruit and vegetable intake to better evaluate long-term impacts of comic-based education.

## **CONCLUSION**

The study showed a significant effect of comic book media on improving students' knowledge and attitudes toward fruit and vegetable consumption at SDIT IQRA 1 Bengkulu. The average knowledge score increased from 56.35 to 96.03, and the attitude score from 28.41 to 37.44 after the intervention. Comic books proved to be an effective and engaging educational medium that helps children understand nutrition messages easily and develop positive attitudes. The findings support the idea that visual and

story-based media can strengthen healthy behavior from an early age.

It is recommended that teachers and health educators use comic books as a tool for nutrition education in schools, supported by parents to build healthy eating habits. Further research is needed to assess the long-term impact.

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