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**The Effect of Comic Books on Improving Knowledge and Attitudes Towards
Brushing Teeth Among Students SDN Sawapudo**

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ABSTRACT

Oral health is often neglected, and many people do not understand that the oral cavity is an entry point for germs and bacteria that can cause disease. Comics are a widely recognized medium of information, and with advances in technology, digital comics can be accessed anytime via smartphones. This study aims to determine the effect of using comic books in improving knowledge and attitudes toward tooth brushing among students at SDN Sawapudo. The method used was a single-group design with pre-test and post-test. This study involved 37 students who filled out knowledge and attitude questionnaires that were processed using SPSS and the Wilcoxon test. The results of the knowledge test before the intervention showed that 27% were in the good category, 38% were in the fair category, and 35% were in the poor category. After the intervention, 62% were in the good category, 27% were in the fair category, and 11% were in the poor category. Meanwhile, the attitude results showed that 24% were good, 68% were moderate, and 8% were poor before the intervention, and after the intervention, 24% were good, 76% were moderate, and 0% were poor. The conclusion of the effect test showed a p-value of 0.006 (≤ 0.05), indicating a significant effect between before and after reading comics.

Keywords: Knowledge, Attitude toward brushing teeth

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INTRODUCTION

Oral health is often neglected by some people. The public does not understand that the oral cavity is one of the entry points for germs and bacteria, which can cause disease. Tooth decay is still commonly found in children and adults, and if left untreated, it can affect a person's quality of life. The accumulation of plaque into calculus is the beginning of dental and oral diseases, especially periodontal disease (Setyawati et al, 2019)

Oral health is a key factor in achieving optimal overall health. Maintaining good oral health can improve quality of life and enhance the productive capacity of human resources. Efforts to maintain dental and oral health must be carried out from an early age in elementary school, considering that dental and oral health diseases are among the ten most common and largest diseases in various regions. Dental and oral health are said to be part of overall physical health. The oral cavity is the entry point for germs and bacteria that can interfere with the health of other organs (Rakhmawati et al, 2020)

The World Health Organization (WHO) defines health as a state of physical, mental, and social well-being, not merely the absence of disease or infirmity. Oral health is an inseparable part of overall health, as it is a component of physical health and the starting point for overall bodily health (WHO, 2020)

The prevalence of oral health worldwide is around 3.5 billion people, with 3 out of 4 people affected living in middle-income countries. Globally, an estimated 2 billion people suffer from permanent tooth decay, and 514 million children suffer from primary tooth decay, World Health Organization (WHO) 2022. In Indonesia, 93.2% of children aged 5-9 years are reported to brush their teeth daily, while only 1.4% brush their teeth at the right time. For the 10-14 age group, around 96.5% brush their teeth daily, with only 2.1% doing so at the right time (Riskesdas Report 2018). In Southeast Sulawesi, 92.31% of children aged 5-9 years old are reported to brush their teeth every day, while only 4.05% brush their teeth. At the right time. For the 10-14 age group,

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around 96.77% brush their teeth every day, with only 5.92% brushing at the right time (Riskesdas 2018).

The formation of dental and oral health maintenance behaviors should be done from an early age, where the most appropriate time to instill values to form positive behaviors is during school age. Elementary school age is the ideal age to train a child's motor skills, including brushing teeth. The habit of brushing teeth introduced at an early age will guide children toward practicing good brushing habits in the future. Good brushing habits will influence the development of dental health in adulthood (Fatmasari et al., 2020).

The formation of tooth brushing behavior in schools can be implemented through a group tooth brushing program. The daily tooth brushing program at school has not been routinely implemented at the Sawapudo Village Elementary School. On average, it is only done once a year (Fatmasari et al., 2020).

Proper tooth brushing is done after breakfast and before bedtime, with a minimum brushing time of 2 minutes. Brushing teeth after breakfast aims to clean food debris after eating, and brushing before bedtime aims to clean food debris after dinner. Instilling the habit of brushing teeth at night before bedtime is practiced at home with parental guidance, where 96% of children are introduced to the habit of brushing teeth by their mothers (Fatmasari et al., 2020).

The impact of tooth brushing behavior in elementary school children can be influenced by many things, one of which is motivation. Motivation is something that drives a person to act, which can be internal or external. Incorrect tooth brushing behavior will have an impact on the child's dental health. The importance of proper tooth brushing behavior must be taught from an early age (Ayu Dewi Kumala Ratih & Hasiva Yudita, 2021).

School-aged children are at an age where they enjoy unhealthy snacks such as sweet and sticky foods. However, they tend to neglect proper dental care. Children who eat too many sweet foods and do not brush their teeth after eating sweet and sticky foods will develop dental problems.



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One of the causes of dental problems is a lack of knowledge about proper brushing techniques (Claudiati et al., 2021).

The results of a study (Cara et al., 2019) show that children aged 7-12 years have a high chance of developing high-category caries. The study reveals that the factors that influence the occurrence of dental caries in children are brushing technique, brushing time, the intensity of eating sweet foods, and the time of eating sweet foods.

Comic books are a well-known medium for conveying information in printed form. With technological advances, comics have become more modern in digital form so that they can be read without being limited by time. And place using smartphones. Although comics were originally only for entertainment and were fictional, with the development of society, new categories of comics have emerged that have educational elements in them, such as education, factual information, and so on (Gunawan & Sujarwo, 2022).

This study was conducted to determine the effect of using comic books on improving knowledge and attitudes toward tooth brushing among students at SDN Sawapudo Elementary School in Soropia District, Konawe Regency.

METHOD

The type of research used in this study was quantitative research, and the research design used a pre-test and post-test one-group design. The population in this study consisted of 74 students. Sampling was conducted using purposive sampling, where the research sample had characteristics that were the same or almost the same as the characteristics of the population, so that the sample used could represent the population being observed, resulting in a sample size of 37 people.



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RESULTS

1. Respondent Characteristics

a. Based on Gender

Table 1: Distribution of sample characteristics of third, fourth, and fifth-grade students

Gender	n	Percentage
Male	18	49%
Female	19	51%
Total	37	100%

Based on data from Table 1, the distribution of samples according to gender at SDN Sawapudo shows that there are 18 or 48.65% male respondents and 19 or 51.35% female respondents.

b. Characteristics Based on Age

Table 2: Distribution of sample ages of third, fourth, and fifth-grade students

Age	n	Percentage
8	2	6%
9	16	43%
10	10	27%
11	9	24%
Total	37	100%

Based on Table 2, the distribution of samples according to age at SDN Saawapudo, it is known that there are 2 or 5.4% of respondents who are 8 years old, 16 or 43.24% of respondents aged 9 years, 10 or 27.03% of respondents aged 10 years, and 9 or 24.32% of respondents aged 11 years.



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1. Research Variable Characteristics

Table 3: Distribution of knowledge before being taught using comic books

Category	n	Percentage
Good	10	27%
Moderate	14	38%
Poor	13	35%
Total	37	100%

Table 3 shows that there were 10 (27%) respondents with good criteria, 14 (38%) respondents with moderate criteria, and 13 (35%) respondents with poor criteria. The total overall criteria was 37 (100%).

Table 4: Distribution of Knowledge after being taught using comic books

Category	n	Percentage
Good	23	62%
Moderate	10	27%
Poor	4	11%
Total	37	100%

Based on Table 4 above it shows that 23 (62%) respondents had good criteria, 10 (27%) respondents had moderate criteria, and 4 (11%) had poor criteria. The total overall criteria is 37 (100%).



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Table 5: Distribution of attitudes before being given comic books

Category	n	Percentage
Good	9	24%
Moderate	25	68%
Poor	3	8%
Total	37	100%

Based on Table 5 above it shows that 9 (24%) respondents have good criteria, 25 (68%) respondents have moderate criteria, and 3 (8%) have poor criteria. The total overall criteria is 37 (100%).

Table 6: Distribution of attitudes after being given comic books as media

Category	n	Percentage
Good	9	24%
Moderate	28	76%
Poor	0	0%
Total	37	100%

Based on Table 6 above, it is evident that 9 (24%) met the good criteria, 28 (76%) met the moderate criteria, and 0 (0%) met the poor criteria. The total overall criteria is 37 (100%).

2. Normality Test Results in SPSS

Table 7 Normality Test

Variable	P-value
Knowledge before being given the comic books	0,084
Knowledge after being given the comic books	0,008
Attitude before being given the comic book	0,384
Attitude after being given the comic book	0,008

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**Shapiro-Wilk*

Table 7 shows that the results of Shapiro's test Shapiro Wilk's test on the knowledge variable before reading comics obtained a significant value of 0.084 > 0.05, so the data concluded that the knowledge variable before reading comics was normally distributed, while the knowledge variable after reading comics obtained a significant value of 0.008 < 0.05, which means that the knowledge variable after reading comics was not normally distributed. Meanwhile, the attitude variable before reading the comic book obtained a significant value of 0.384 > 0.05, so it can be concluded that the attitude variable before reading the comic book is normally distributed, while the variable after reading the comic book obtained a significant value of 0.008 < 0.05, so it can be concluded that the attitude variable after reading the comic book is not normally distributed. From both variables, not all data are normally distributed, so this study uses a non-parametric test (the Wilcoxon test).

Table 8 Results of Analysis of the Effect of Comic Book Use in Improving Knowledge and Attitudes Towards Brushing Teeth Among Students

Variable	P-value
Knowledge and attitude	0,006

**Uji Wilcoxon*

Based on Table 8, an Asymp Sig. Value of $0.006 \leq 0.05$, so it can be concluded that there is a significant effect between before reading comics and after reading comics.

DISCUSSION

Based on the research conducted on students at SDN Sawapudo, the aim was to determine the effect of using comic books in improving knowledge and attitudes towards brushing teeth among students at SDN Sawapudo, Soropia District, Konawe Regency. In this study, the researcher used certain criteria and categories. For the knowledge criterion, 7-10 was categorized

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as good, 5-6 as moderate, and 3-4 as poor. Meanwhile, for the attitude criterion, 46 -50 was categorized as good, 41-45 as moderate, and 35-40 as poor.

Results Table 1: The research sample consisted of 37 students (18 boys and 19 girls). All samples in this study participated in the research process based on data from Table 4.1, which shows the distribution of samples by gender at SDN Sawapudo. It was found that 18 or 49% of respondents were male, and 19 or 51% were female.

Table 2 shows the distribution of the sample according to age at SDN Saawapudo. It shows that there were 2 or 5.40% of respondents who were 8 years old, 16 or 43.24% of respondents were 9 years old, 10 or 27.03% of respondents were 10 years old, and 9 or 24.32% of respondents were 11 years old.

Table 3 shows that before being given the comic book, 10 (27%) respondents had good knowledge, 14 (38%) had moderate knowledge, and 13 (35%) had poor knowledge. The total overall criteria was 37 (100%).

The results of Table 4 on knowledge after being given the comic book show that 23 (62%) respondents had good criteria, 10 (27%) respondents had moderate criteria, and 4 (11%) had poor criteria. The total overall criteria was 37 (100%).

The results in Table 5 on student attitudes before being given the comic show that 9 (24%) respondents had good criteria, 25 (68%) respondents had moderate criteria, and 3 (8%) had poor criteria. The total criteria were 37 (100%).

The results in Table 6 show that after being given the comic, 9 (24%) students had good criteria, 28 (76%) had moderate criteria, and 0 (0%) had poor criteria. The total criteria were 37 (100%).

The results in Table 7 of the normality test of the comic book medium show that the Shapiro-Wilk test results for the knowledge variable before reading the comic obtained a significant value of $0.084 < 0.05$, so it can be concluded that the variable before reading the comic is normally distributed, while the knowledge variable after reading the comic obtained a

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significant value of $0.008 > 0.05$, which means that the variable after reading the comic is not normally distributed. Meanwhile, for the attitude variable before reading. Comics, a significant value of $0.384 < 0.05$ was obtained, so it can be concluded that the variable before reading comics is normally distributed, while the attitude variable after reading comics obtained a significant value of $0.008 > 0.05$, which means that the variable after reading comics is not normally distributed. Since all data. Since the variables are not normally distributed, this study uses a non-parametric test (Wilcoxon test).

The results of Table 8 of the Wilcoxon test for comic books show an Asymp Sig. Value of $0.006 > 0.05$, so it can be concluded that there is a significant effect between before. Reading comics, and after reading comics.

This study is in line with research conducted at the Faculty of Dentistry, Mahasaraswati University, Denpasar, by I Nyoman Panji Triadnya Palgunadi (2020) that the high incidence of dental and oral diseases has prompted educational programs for elementary school children to raise awareness of the importance of maintaining dental and oral health. One of the causes of dental and oral health problems in elementary school children is the attitude of neglecting dental and oral hygiene.

According to the WHO and the FDI, citing the Global Goals for Health 2020, oral health issues significantly impact a country's overall health, as teeth and the mouth are essential parts of the body for consuming food and beverages to meet human needs. The WHO outlines several dental health indicators that a country should aim to achieve, such as: pain, functional dental disorders, preventing disease transmission through the mouth, preventing oropharyngeal cancer, managing oral manifestations of HIV infection, trauma, craniofacial anomalies, dental caries, dental developmental anomalies, periodontal disease, oral mucosal disease, glandular disorders, tooth loss, and dental health services.

Comic books are one of the most well-known media for conveying information, long familiar to the public in printed form. With technological advances, comics have become more

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modern in digital form so that they can be read without being limited by time and place using smartphones. Although initially comics were only for entertainment and were fictional, with the development of society, new categories of comics have emerged that have educational elements in them, such as education, factual information, and so on. (Gunawan & Sujarwo, 2022)

Comics are very popular reading material, and currently, they are one of the most favored reading materials among children. Comics are stories that contain pictures, writing, and stories packaged in a book. Comics are a means of health promotion to convey messages about how to brush teeth properly and correctly through pictures. Comics are defined as illustrated stories that are easy to understand and humorous, serving to convey stories through illustrations to describe health behaviors. Comics are a medium that can provide models. That can be used to improve and develop children's personalities. Comics can be used as teaching materials because they can enhance the teaching and learning process and increase students' interest in learning.

The success of the desired behavioral change is influenced by the method used. The comic method is an alternative in delivering health promotion material accompanied by verbal explanations, which will ultimately be carefully recorded to digest facts and imagination so that they are easy to remember (Palgunadi, 2020).

The use of learning media that utilizes technological advances is also in line with the current independent learning curriculum, which is a solution from the Ministry of Education and Culture to overcome the prolonged learning crisis caused by the pandemic (Rachmawati et al., 2022). This is because learning in the independent curriculum is oriented towards an active, interactive learning process that gives a joyful impression to students. One form of digital technology-based learning media that meets the learning criteria in the independent learning curriculum is the use of digital comic teaching materials.

Attitude is a person's closed response to an object, whether internal or external, so that the action cannot be seen directly. However, it can only be explained in advance from the closed



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behavior. In reality, attitude shows a response. Attitude is a person's view of an object that precedes their actions (Kusuma & Nurcahayati, 2021).

CONCLUSION(S)

1. There was an increase in students' knowledge before and after being given comic books at SDN Sawapudo.
2. There was an increase in attitude before and after comic books were given to students at SDN Sawapudo.
3. Comic books influence improving tooth brushing behavior among students at SDN Sawapudo.

Conflict of Interest

All authors contributed equally to the conception, design, data collection, analysis, and writing of this article. All authors have read and approved the final manuscript.

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