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Dental Smart Book Media to Dental Health Knowledge in Junior High School

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ABSTRACT

Background: Based on data from the Indonesian Health Survey (SKI, 2023), there is a 56.9% proportion of dental health problems in Indonesia. Therefore, strategies are needed to address these issues, one of which is through promotive efforts. Effective counselling is influenced by the media and methods used, such as utilizing the dental smart book, which is a development of dental health education media. Objective: To obtain an overview of dental health knowledge before and after counselling using the dental smart book media among students of Junior High School Muhammadiyah 29 Sawangan Depok. Method: This research was conducted using a quasi-experimental method with a pre-test and post-test design. The study was carried out at SMP Muhammadiyah 29 Sawangan Depok. The sampling technique used was total sampling, with a total of 32 students as respondents. The instruments used were questionnaires and the dental smart book media. Results: The study showed that 30 students (93.8%) were in the good category and 2 students (6.2%) were in the sufficient category after being given the intervention using the dental smart book media. Conclusion: The dental smart book media is effective in improving dental health knowledge among eighth-grade students of of Junior High School Muhammadiyah 29 Sawangan Depok.

INTRODUCTION

Health generally encompasses various aspects, such as welfare, education, and community development, including dental health (Ramadhan et al., 2016). Dental health is a healthy condition of the oral cavity tissue which functions as a tool to facilitate eating, speaking and interacting with confidence without discomfort or embarrassment, so that it will have an impact on the quality of life (Shenoy et al., 2020).

According to the Global Oral Health Status Report (World Health Organization, 2022), nearly 3.5 billion people worldwide suffer from oral diseases, with 3 out of 4 affected people living in middle-income countries. Globally, an estimated 2 billion people suffer from permanent dental caries and 514 million children suffer from primary dental caries.

Dental health in Indonesia is currently not a priority and is not a significant reason for people to seek health services (Purnama et al., 2024). Based on data from the Indonesian Health Survey 2023, 56.9% of children aged ≥3 years in Indonesia have dental health problems, with 91.9% never seeking dental care due to reasons such as never having had a toothache, feeling it was unnecessary, going to a dentist, or self-treatment. Meanwhile, the proportion of dental health problems based on the 10-14 age group (48.8%) with a proportion of 92.7% never seeking dental care and the 15-24 age group (47.3%) with a proportion of 92.9% never seeking dental care. These data indicate that public awareness of seeking dental care is still very low, and generally people only seek treatment when they feel sick (Kemenkes, 2023).

One of the causes of dental health problems is behavioural factors that tend to ignore and lack public knowledge about the importance of maintaining dental health (Purnama T, Rasipin, 2020). Knowledge is the result of knowing that occurs after an individual observes a particular object. Some human knowledge is acquired through education, personal experience, mass media, the environment, and other sources. This proves that the level of knowledge will have a significant impact on a person's behaviour, including maintaining their dental health (Adam & Ratuela, 2022).

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Dental health knowledge refers to an individual's understanding of oral diseases, how they occur, and how to treat them. Dental health education is crucial given the numerous and common dental health issues that arise (Erdiyani et al., 2023). Therefore, efforts are needed to foster healthy knowledge, attitudes, and behaviours, particularly regarding dental health (Widiyastuti et al., 2022). Efforts to increase knowledge and encourage behavioural change include community dental health promotion (Tsakila & Purnama, 2025). Before preventive efforts begin, health promotion is the first step in reducing the severity of disease. A global health organization program known as the Health Promoting School aims to promote health and improve public health through oral health education.

Providing dental health education through health promotion efforts for adolescents is an ideal opportunity to cultivate awareness and enhance cognition. The process of promoting dental health requires engaging and motivating training, necessitating integrated media (Ngatemi et al., 2022). Media in dental health education is used as aids or visual aids to convey information in an engaging way, such as smart books. Medium containing text and images. It has sentences that are easy to understand, simple, and practical. It is useful for concretizing abstract concepts so that they can be Smart Book is a learning medium containing text and images. It has sentences that are easy to understand, simple, and practical. It is useful for concretizing abstract concepts so that they can direct the user's attention to one point and become an alternative learning model (Amalia, 2023). Research conducted by (Kanza et al., 2021) demonstrated that 27 out of 31 respondents had "Good" knowledge (87.1%) after receiving counselling using smart books. Based on these findings, smart books are rarely used in dental health promotion. Therefore, the authors were interested in modifying smart books for daily dental health education in the form of a Dental Smart Book.

METHOD

The type of research used was a quasi-experimental study with a pre-test and post-test design, involving respondents in groups or divided into several sessions. This study aimed to determine the description of dental health knowledge before and after using the Dental Smart Book media among students of Junior High School Muhammadiyah 29 Sawangan Depok in 2025.

The population used in this study was all 32 students of class VIII A at Junior High School Muhammadiyah 29 Sawangan Depok. The study used a total sampling technique, where the population within class VIII A was used as the sample. Roscoe stated in his research methods book (Sugiyono, 2017) that a minimum of 30 students in each category are appropriate for this study. To determine the sample size, the following criteria must be met:

1. Registered as a student at Junior High School Muhammadiyah 29 Sawangan Depok
2. In class VIII A
3. Willing to be a respondent and present until the end of the research period.

The instruments used by the researchers were respondent consent forms, questionnaires (pre-test and post-test) used to obtain data on dental health knowledge, and the Dental Smart Book, which contains material on comparing the good and bad aspects of dental health.

The procedure for collecting data on dental health knowledge before and after using the Dental Smart Book among students at Junior High School Muhammadiyah 29 Sawangan Depok, has the following mechanism:

1. The researcher introduced herself and explained the purpose of the research and the activities to be carried out
2. The researcher distributed pre-test questionnaires to students who were willing to participate and met the criteria. Students were given 15 minutes to complete them.
3. The researcher explained the Dental Smart Book media to the students of Junior High School Muhammadiyah 29 Sawangan Depok
4. The researcher divided the respondents into two sessions to form small groups. Each session lasted 30 minutes to master the media.
5. The researcher distributed the media to respondents.
6. The researcher provided instructions to respondents on how to use the media.
7. The study was declared complete when all students in that session had used the Dental Smart Book.

Research data analysis was conducted using univariate analysis, or analysis used to describe collected data and focus on a single variable. Primary data was collected, recorded, and presented in tabular form, then analyzed descriptively to obtain an accurate picture and variables.

RESULT

Table 1. Frequency Distribution of Dental Health Knowledge Before Counselling with Dental Smart Book Media

Knowledge	Frequency	Percent (%)
Good	3	9,4
Moderate	27	84,4
Poor	2	6,3
Total	**32**	**100**

Table 1 shows that before being provided with dental smart book education, 27 students (84.4%) in class VIII A had moderate dental health knowledge, 3 students (9.4%) had good knowledge, and 2 students (6.3%) had poor knowledge.

Table 2. Frequency Distribution of Dental Health Knowledge After Counselling with Dental Smart Book Media

Knowledge	Frequency	Percent (%)
Good	30	93,8
Moderate	2	6,3
Poor	0	0
Total	**32**	**100**

Table 2 shows that after providing counselling using the dental smart book to class VIII A students at Junior High School Muhammadiyah 29 Sawangan, Depok, the majority of students demonstrated a good level of knowledge regarding dental health, with 30 students (93.8%), 2 students (6.3%) having moderate knowledge, and 0 students (0%) having poor knowledge.

DISCUSSION

The results of research and data analysis on 32 students of Junior High School Muhammadiyah 29 Sawangan Depok showed that the level of knowledge before being given counselling using dental smart book media with the majority of results in the moderate category, namely 27 students (84.4%). After being given counselling using dental smart book media, there was a significant increase in knowledge, namely 30 students (93.8%) were in the good category. This increase shows that the use of dental smart book media is effective in increasing students' knowledge about dental health, this media uses a visual and interactive learning approach, this approach can attract students' attention and make it easier for them to understand important concepts about dental health (Abral et al., 2020).

This is reinforced by a similar study conducted by (Fitri et al., 2023) which also examined the use of smart books with a sample of 32 students. In their study, the results obtained before the intervention, the majority of 24 students (63%) were in the poor category and after the intervention there were 25 students (66%) in the good category. The results of this study confirm that the use of smart books can improve knowledge.

Comparable to research conducted by (Kanza et al., 2021) on the use of smart books with a sample of 31 respondents, after receiving the smart book, the majority of pregnant women have knowledge in the good category, as many as 27 respondents (87.1%), 3 respondents (9.7%) are in the moderate category, and 1 respondent (3.2%) in the poor category. This indicates that the provision of smart books has a positive impact on increasing knowledge(Haq, 2015).

These results support research that the majority of students at Junior High School Muhammadiyah 29 Sawangan Depok have good dental health knowledge, but some students still have moderate dental health knowledge. This is because students at Junior High School Muhammadiyah 29 Sawangan Depok have varying abilities. Age, experience, education, and occupation are some factors that can influence a person's knowledge (Mahirawatie & Ramadhani, 2021). This differs from the research conducted by the researchers, as the sample, aged 13-15, represents adolescents with a greater curiosity to expand their knowledge (Purwaningsih et al., 2022).

The success of health education programs depends on the media used to foster community participation. Media significantly assists in health education because the message can be conveyed more clearly, enabling the public to not only know, be aware, and understand, but also be willing and able to implement recommendations (Abral et al., 2020). Currently, educational media are increasingly being

developed, one of which is the dental smart book. The use of dental smart book can create interest and enjoyment in users, encouraging them to actively learn and understand the content presented due to the ease of use of the media.

The Dental Smart Book is an educational tool designed to raise awareness of the importance of maintaining dental and oral health (Fitri et al., 2023). It includes a mini-book as informational material that can be used to analyze the comparison between healthy and unhealthy teeth and various other instructions regarding dental and oral health. It also includes additional tools such as a flashlight and mirror, allowing users to learn and recognize dental conditions independently. Packaged in an elegant black wallet, the book is compact in size, making it very practical to carry anywhere and ideal for daily educational use.

CONCLUSION

Based on the research results, it can be concluded that there was an increase in knowledge before dental and oral health counselling using dental smart book.

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