

Research Article



THE INFLUENCE OF HEALTH EDUCATION USING THE ROLE MODEL ON MOLAR CARIES PREVENTION BEHAVIOUR IN PRIVATE ELEMENTARY SCHOOLS IN KENDARI CITY

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ABSTRACT

Background: The prevalence of dental caries in private elementary school children is still high in Kendari City, Southeast Sulawesi Province. Elementary school children's knowledge about how to prevent dental caries is still lacking. Thus, encouraging less preventive behavior towards dental caries. Therefore, dental health education for school children needs to be carried out. This study aims to analyze the influence of Health Education with role model media on the behavior of preventing caries in permanent first molar teeth in private elementary schools in Kendari City.

Methods: This study recruited 105 private elementary school students in Kendari City, namely Hidayatullah and Al-Fath. This research was conducted in July-December 2023. The research variables include knowledge, attitudes and actions towards the prevention of dental caries as dependent variables, and Health Education with the role model method is the independent variable. Data analysis using the Wilcoxon test.

Results: This study suggests that Health Education with role model method influences knowledge, attitudes, and actions towards preventing caries in permanent first molar teeth ($p < 0.05$).

Conclusion: Health education using the role model method encourages behavioral changes towards preventing dental caries.

Keywords: *education, health, role, model, student, tooth*

INTRODUCTION

Dental health problems such as tooth decay in elementary school-aged children are still a challenge in Indonesia, including Kendari City, Southeast Sulawesi Province. Elementary school age children are very susceptible to dental and oral health problems. In this case, it is related to children's knowledge which is still lacking, especially regarding the timing and correct way of brushing their teeth. Brushing your teeth plays a very important role in preventing the development of bacteria that can cause tooth decay.(1–4)

Oral cavity diseases that children often face are generally cavities or tooth caries and periodontal disease.(5) In Indonesia, the prevalence of dental caries continues to increase, such as in the province of Southeast Sulawesi. In 2018, the prevalence of dental caries cases in Southeast Sulawesi Province was 51.9%, compared to Indonesia at 45.3%.(6) In 2023, the prevalence of dental caries will be 48.03%, but compared to the prevalence in Indonesia, it is still high, namely 43.6%.(7) One of the cities in Southeast Sulawesi province with a high prevalence is Kendari City, recorded at 45.24% in 2018. The prevalence is high compared to other cities or districts in Southeast Sulawesi Province, namely South Buton Regency (42.94%).(8)

Lack of knowledge and attitudes of students regarding dental caries has led to the occurrence of dental caries. Elementary school children do not take preventive measures. Therefore, health education towards increasing knowledge, attitudes and preventive measures needs to be carried out so that the knowledge and attitudes of elementary school children increase. Effective implementation of education requires the use of media so that the level of

target acceptance of educational aspects can be optimal.(9–11) There are many media that can be used in providing health education, both printed media such as leaflets, brochures and electronic media or technology.(12,13) Other media can be in the form of role models, which in several health education programs are stated to be effective in increasing knowledge, such as pantomimes as demonstration tools.(14–17) In social learning theory, role models are one way for individuals to imitate, which has an impact on improving individual cognitive abilities.(18–20)

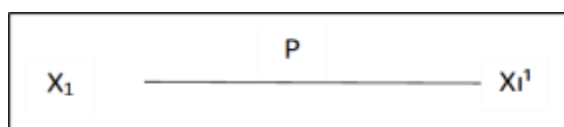
Role model media is an educational technique that displays examples of role models. The use of role model media may be able to directly show the causes or consequences that result from not brushing your teeth properly. The target will be interested because of the impact they see directly from the model. However, whether this media role model is suitable and effective in influencing the behavior of students at private elementary schools in urban areas is still unclear. Therefore, this study aims to analyze the influence of health education using role model media on increasing knowledge, attitudes and preventive actions for caries in first permanent molar teeth in private elementary schools in Kendari City.

METHODS

Research design

This quantitative research uses a pre-experimental approach with a one group pretest-posttest design. This method is used to test the effectiveness of the influence of education with role model media on increasing knowledge, attitudes and actions of elementary school students in preventing

caries of the first permanent molar teeth in private elementary schools in Kendari City.



X₁ : Knowledge, attitudes, and actions before being given health education

P : Health education with role model media

X₁' : knowledge, attitudes, and actions after being given health education

Figure 1. Pre-experimental method with one group pre-test-post-test design

Participant Selection

This research was conducted in two private elementary schools in Kendari City, namely SD Islam Hidayatullah and Pesante Al-Fath in July-December 2023. This study recruited 105 students and students of Hidayatullah Elementary School and Al-Fath Islamic Boarding School, namely in grades III, IV and V. The sample recruited was 63 students at Hidayatullah Elementary School and 42 students at Hidayatullah Elementary School using the simple random sampling technique.

Data measurement

The independent variable in this study is health education with role model media, namely a human pantomime. Meanwhile, the dependent variables are knowledge, attitudes and actions. Knowledge is assessed on students' understanding of the function of teeth, foods that are good and damaging to teeth, how and when to brush teeth, good toothbrush bristles, how to care for dental health, how to prevent dental disease, and check-ups with a doctor at least once every 6 months. The assessment is based on 10 questions with a Guttman scale, with categories of good ($\geq 67\%$), sufficient ($\geq 33\% - < 67\%$), and lacking ($< 33\%$).

The attitude in this study is the response to maintaining dental and oral health. Assessment using a Likert scale: Strongly agree (value 5), Agree (value 4), Undecided (value 3), Disagree (value 2), Strongly disagree (value 1). Objective criteria use the categories good ($\geq 73\%$), sufficient ($\geq 27\% - < 73\%$), and poor ($< 27\%$). Actions assessed are related to dental and oral health maintenance practices or actions, including the correct way to brush teeth. The assessment uses 10 questions, where if you answer yes you will be given a score of "1" and if you answer no you will be given a score of "0". Objective criteria include the categories Good (≥ 67), Sufficient ($\geq 33\% - < 67\%$), and Poor ($< 33\%$).

Statistical analysis

After the data is edited, documented, cleaned, and scored, the data is then analysed. Data analysis includes descriptive and inferential analysis. Descriptive analysis analyses knowledge, attitudes, and actions both before and after. Statistical analysis uses the Wilcoxon test.

RESULTS

Respondent characteristics

The age of respondents in Hidayatullah was mostly 9 years old (36.51%), while in al-Fath it was 10 years old (35.71%) (Figure 2). The smallest age is 8 years in Hidayatullah (26.98%) and also in Al-Fath 930.95%).

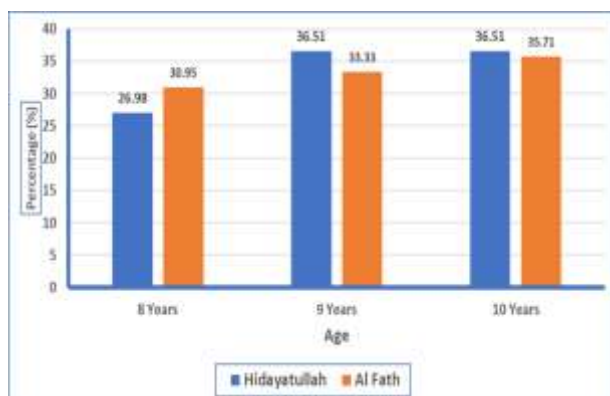


Figure 2. Respondent's Age

Likewise with gender, the majority of respondents were women both in Hidayatullah (60.32%) and in Al-Fath (52.38%) (Figure 3).

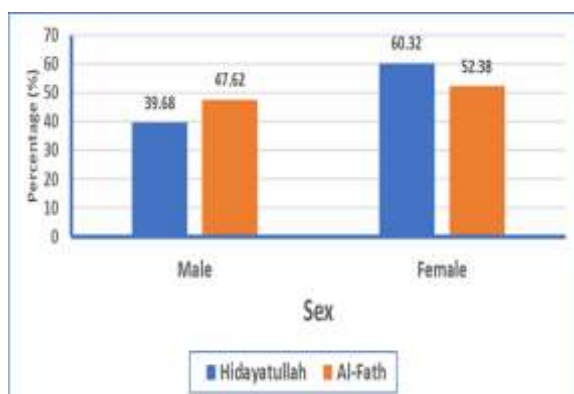
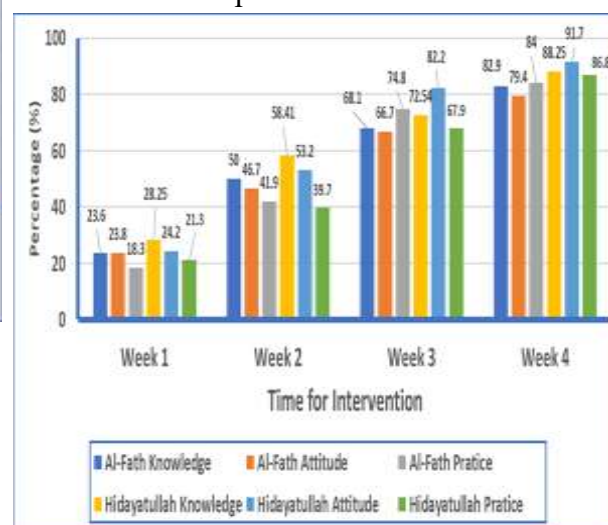


Figure 3. Respondent Gender

The influence of health education with role model media on the level of knowledge, attitudes, and preventive actions for caries in permanent first molar teeth

The test results show that the trend of knowledge, attitudes and actions after health education with role model media tends to increase from the first week to the fourth week (Figure 4). The changes are very significant when comparing the first week with the fourth week of providing health education using role model media. The results of the Wilcoxon test also showed a significant influence of health education with role model media on the knowledge, attitudes and actions of students at

Hidayatullah and Al-Fath towards preventing caries in the first permanent molar teeth.



Note: Wilcoxon test: $p < 0.000$ of knowledge, $p < 0.000$ of attitude, $p < 0.000$ of practices

Figure 4. Trend of weekly changes and the influence of health education with role model media on the level of knowledge, attitudes, and preventive actions of caries in permanent first molar teeth

DISCUSION

The Influence Of Health Education Using Role Model Media On Students' Knowledge In Preventing Caries In Permanent First Molar Teeth

This study has stated that health education with role model media, namely by using human pantomimes, greatly influences the knowledge of students at Hidayatullah and Al-Fath Elementary Schools about preventing caries in permanent first molar teeth. In this case, media role models can make it easier for individuals to imitate the behaviour they will carry out. In this case, the role model method uses examples of objects that correspond to the actions that will be carried out.(21,22) Furthermore, by using role model media, the capture of

stimuli becomes broader for individuals who are given health education, namely through the senses of sight, touch and hearing, in addition to direct practice of imitating the model.(22) With the many senses used, the targets of health education, including elementary school students, become more aware of the information provided in health education about what, the causes and how to prevent caries in the first permanent molar teeth. Furthermore, the role model method is a planned learning activity designed to achieve educational goals that are used to explain roles, attitudes, behaviour, values with the aim of experiencing the feelings, perspectives and ways of thinking of other people.(23) The results of this study are in line with research conducted by Johnson & Burns (2021). Based on the research results, it was stated that the role model method is more effective than the demonstration method.(24) It is better to use the role model or phantom method when providing health education about brushing teeth to elementary school students.

The Influence Of Health Education Using Role Model On Students' Attitudes In Preventing Caries In Permanent First Molar Teeth

Health education with role model media can change students' attitudes towards dental health. This change in attitude towards positive dental health among elementary school students is because they already understand the importance of dental health and how to maintain dental health. Increasing a person's knowledge is always followed by a change in attitude towards a positive direction.(25,26) Changes in individual attitudes also occur when the individual's absorption capacity is high and they have many information channels.(27)

By looking at a real model, information absorption becomes greater. Besides that, students in their daily lives are also surrounded by various media today. Of course, apart from health education through role model media, students have also received information from other channels or media such as social media or electronic media such as television. Therefore, it is also important to relate it to students' experiences in obtaining previous information, in order to obtain completeness from the results of this study.

The Influence Of Health Education Using Role Model On Students' Actions In Preventing Caries In Permanent First Molar Teeth

Action is the realization of knowledge and attitude into a real action. Action is also a person's response to a stimulus in a real or open form.(28) A person's actions towards a particular stimulus will be largely determined by how they believe and feel about that stimulus. Biologically, attitudes can be reflected in an action, but it is not said that attitudes and actions have a systematic relationship. The response to the stimulus is clear in the form of actions or practices that can easily be observed or seen by others.

The results of this study indicate that health education with role model media has a significant effect on students' actions in preventing caries in permanent first molar teeth. By using role models, students can be motivated to carry out the actions that will be imitated.(22) The process of how role model media can stimulate student behaviour, which in this case is linked to the informative function.(29)

CONCLUSION

Health education with role model media has been proven effective in influencing students' knowledge, attitudes and actions in preventing caries in permanent first molar teeth at Hidayatullah and Al-Fath Elementary Schools in Kendari City. This research needs to be further explored by comparing it with other health education media, such as demonstrations or Focus Group Discussions.

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