



## The Effectivity of Dental Health Education for Boarding School Students Using Audiovisual Media

Rr Pipiet Okti Kusumastwi<sup>1\*</sup>, Salsabila Usman<sup>2</sup>

<sup>1</sup>Department of Dentistry, Dentistry Study Program, Faculty of Medicine and Health Science, Universitas Muhammadiyah Yogyakarta, Bantul, Indonesia

<sup>2</sup>Dentistry Study Program, Faculty of Medicine and Health Science, Universitas Muhammadiyah Yogyakarta, Bantul, Indonesia

### ARTICLE INFO

#### Keywords:

Attitude  
Hygiene  
Schools  
Students  
Surveys

#### \*Corresponding author:

Rr Pipiet Okti Kusumastwi

#### E-mail address:

[pipietokti@yahoo.com](mailto:pipietokti@yahoo.com)

All authors have reviewed and approved the final version of the manuscript.

<https://doi.org/10.37275/cmej.v4i1.309>

### ABSTRACT

This study aimed to determine the effectiveness of audiovisual media in increasing students' knowledge and attitudes toward dental health in the Islamic boarding school, Yogyakarta, Indonesia. This study is a quasi-experimental study with a pre-posttest design approach. The target population was composed of students enrolled in 7th grade of an Islamic boarding school in Yogyakarta. A total of 82 students took part in this study. The students were assessed on their knowledge and attitudes before being given intervention through a pre-test questionnaire. An intervention was carried out by watching 10 minutes educational video on the main oral health preventive measures, including guidelines on diet and oral hygiene. The students watched the video 7 times for 7 days. After the intervention was given, then an assessment of knowledge and attitudes was carried out after being given the intervention using a post-test questionnaire. The knowledge aspect of the research subjects showed an increase in scores before the intervention with audiovisual media compared to after the intervention. This study also showed that the attitude aspect of the research subjects towards oral health showed an increase in scores before the intervention with audiovisual media compared to after the intervention. In conclusion, audiovisual media effectively increases knowledge and attitudes related to dental and oral health in students of Islamic boarding school in Yogyakarta, Indonesia.

### 1. Introduction

Dental health is defined as a state of freedom from caries, periodontal disease, pain, and discomfort.<sup>1</sup> Dental and oral health is essential for the body health and quality of life of individuals.<sup>2</sup> A basic illustration is when an individual experiences a toothache due to dental caries; of course, the individual will feel very disturbed in their activities, even causing someone to skip their school or work.<sup>3,4</sup> An early comprehension of dental and oral health is very beneficial for students in maintaining healthy teeth and mouth. Islamic boarding school is one of the educational facilities where students not only go to school but also live in the school.<sup>5</sup> Due to a lack of understanding of dental

and oral health, boarding school students often use one toothbrush together, and they rarely even brush their teeth regularly twice a day.<sup>5</sup>

Various information and graphics are abundant and very easy to access regarding the importance of maintaining healthy teeth and mouth.<sup>6</sup> However, the information and graphics are only words without meaning if not fully understood. Several studies state that there is much information; it is just that sometimes this information needs to be conveyed to the audience.<sup>6</sup> In communication theory, it is clearly described that communication consists of a message, a message delivery medium, and a receiver. If there are too many messages and the recipient is also in good

health, and there are no hearing or visual impairments, then it is sure that the problem is the media conveying the message. For the message to be conveyed optimally, it needs media that can get the attention of the audience. Several studies show that audiovisual media can get the audience's attention.<sup>7,8</sup> This study aimed to determine the effectiveness of audiovisual media in increasing students' knowledge and attitudes toward dental health in the Islamic boarding school in Yogyakarta, Indonesia.

## 2. Methods

This study is a quasi-experimental study with a pre-posttest design approach. The target population was composed of students enrolled in 7<sup>th</sup> grade of an Islamic boarding school in Yogyakarta. A total of 82 students took part in this study. The research was conducted in an Islamic boarding school in Yogyakarta. The inclusion criteria for participants were students aged twelve years old who had obtained parental approval to participate in this study. The approval was stated by filling out and signing an informed consent form. This study was approved by the ethical committee of the Faculty of Medicine and Health Sciences, Universitas Muhammadiyah Yogyakarta, Indonesia (Ref. number: 595/EP-FKIK-UMY/X/2022).

The students were assessed on their knowledge and attitudes before being given intervention through a pre-test questionnaire. The questionnaire was elaborated with direct questions in order to facilitate

the student's comprehension. The questionnaire was voluntarily and individually answered by students, who could leave the study at any time. Furthermore, an intervention was carried out by watching 10 minutes educational video on the main oral health preventive measures, including guidelines on diet and oral hygiene. The students watched the video 7 times for 7 days. After the intervention was given, then an assessment of knowledge and attitudes was carried out after being given the intervention using a post-test questionnaire. The higher the score, the higher the subject's knowledge and attitude towards dental and oral health. Data analysis was carried out using SPSS version 25. Univariate analysis was performed to present the data distribution for each test variable. Bivariate analysis was carried out to find out the difference in mean scores between the pre-test and post-test, where the p-value <0.05.

## 3. Results and Discussion

Table 1 shows a comparison of research knowledge and attitudes after the intervention. The knowledge aspect of the research subjects showed an increase in scores before the intervention with audiovisual media compared to after the intervention. This study also showed that the attitude aspect of the research subjects towards oral health showed an increase in scores before the intervention with audiovisual media compared to after the intervention.

Table 1. The comparison of participants' knowledge and attitude after the intervention.

Variables	Pre-test Mean±SD	Post-test Mean±SD	p-value*
Knowledge	11.8±1.1	17.6±1.2	0.001
Attitude	44.6±3.2	53.9±4.7	0.001

\*Dependent T test; p<0.05.

Communication is essential to transferring information and knowledge from one party to another.<sup>9</sup> Good communication will produce an optimal response from the parties involved. Based on communication theory, it is stated that

communication consists of various elements: a source, message, channel, and receiver.<sup>10</sup> The source is the origin of sending the message, while the message is the information to be delivered. Channel is the media used to convey the message, and the receiver is the target

recipient of the message. This study focuses on exploring the channel aspect of communication. The communication channel consists of various modes: print and audiovisual. Various studies related to communication channel modes show that print media and audiovisual media have the same potential and help optimize communication.<sup>11,12</sup>

Print media is one of the valuable communication media channels for audiences who are more familiar with newspapers, magazines, or tabloid media, as well as the generation aged 50 years and over. Meanwhile, audiovisual media is a communication media channel that is useful for children's audiences and the younger generation.<sup>13</sup> Audiovisual media with animation, content, and colour play can appeal to the audience to see the show. Audiovisual media can trigger an attraction to watch, caused by the play of colours that trigger the activity of rod and cone cells in the retina compared to black and white media.<sup>14</sup> The activity of rod and cone cells in the retina will then be forwarded to be processed in the brain's occipital lobe. Animations and movements that appear in audiovisual challenges can also trigger activity in the brain's hippocampus. The sound that emerges from the audiovisual media also triggers the activity of the auditory center in the brain. The amount of brain activity involved in audiovisual media triggers the attraction and retention of the audience to watch audiovisual media shows.<sup>15,16</sup>

The various theories and studies above show that audiovisual media is promising to be used as a communication medium for Islamic Boarding School Yogyakarta students who are 12 years old children. Audiovisual media is developed quite effectively as a communication medium for Islamic Boarding School Yogyakarta students in a campaign to maintain and change their behaviour related to dental health. Various flyers or brochures that may have been installed in various places did not get the audience's attention, especially since the audience was children. To get the attention of a child, of course, communication media must be able to attract children to witness it. This study shows that audiovisual media

can increase children's interest in paying attention to various information related to the importance of maintaining healthy teeth and mouth and how to practice in their daily life.

#### **4. Conclusion**

Audiovisual media effectively increases knowledge and attitudes related to dental and oral health in students of Islamic boarding schools in Yogyakarta, Indonesia.

#### **5. References**

1. Ozan G, Yildiz E, Yeldiz SO. Effects of dental education on knowledge and clinical behavior of Turkish dentists' regarding oral-systemic health of geriatric patients. *Brazilian Dental Science*. 2021; 24(4): 1-11.
2. Drachev SN, Brenn T, Trovik TA. Oral health-related quality of life in young adults: A survey of Russian undergraduate students. *Int J Environ Res Pub Health*. 2018; 15(4): 719.
3. Shaheen R, AlShulayyih M, Bassar MA, Saeed-Bahamid AA, AlSaffan AD, AlHerbisch R. Self-reported basic oral health knowledge of primary school students and teachers in rural areas of Saudi Arabia. *Clin Cosmetic Invest Dentistry*. 2021; 13: 521-9.
4. Seirawan H, Faust S, Mulligan R. The impact of oral health on the academic performance of disadvantaged children. *Am J Public Health*. 2012; 102(9): 1729-34.
5. Mozartha M, Rais SW, Dewi SRP, Anastasia D, Beumaputra AP, Awalia H. Oral hygiene examination and dental health education of children at Islamic boarding school Palembang. *Arkus*. 2015; 1(1): 9-11.
6. Bramantoro T, Santoso CMA, Hariyani N, Setyowati D, Zulfiana AA, Nor NAM, et al. Effectiveness of the school-based oral health promotion programmes from preschool to high school: A systematic review. *PLoS ONE*. 2021; 16(8): e0256007.

7. Heredia-Ponce E, Irigoyen-Camacho ME, Sánchez-García S. Oral health status of institutionalized older women from different socioeconomic positions. *J Health Care Poor Underserved*. 2017; 28: 1462-76.
8. Bernabé E, Sabbah W, Delgado-Angulo EK, Murasko JE, Gansky SA. Income gradients in oral health according to child age. *Eur J Oral Sci*. 2015; 123: 260-6.
9. Vasileska L, Kosevska E, Lekovska-Stoicovska T, Rechica V. The role of communication and oral health literacy in prevention and promotion of oral health. 2020; 12(1): 49-57.
10. Wong HM, Bridges SM, Ma KW, Yiu CKY, McGrath CP, Zayts OA. Advanced informatics understanding of clinician-patients communication: a mixed-method approach to oral health literacy talk in interpreter-mediated pediatric dentistry. *PLoS ONE*. 2020; 15(3): e0230575.
11. Yuan S, Freeman R, Hill K, Newton T, Humphris G. Communication, trust and dental anxiety: a person-centred approach for dental attendance behaviours. *Dent J (Basel)*. 2020; 8(4): 118.
12. Nouri SS, Rudd RE. Health literacy in the “oral exchange”: An important element of patient-provider communication. *Patient Educ Couns*. 2015; 98(5): 565–71.
13. Parthasarathy DS, McGrath CP, Bridges SM, Wong HM, Yiu CK, Au TK. Efficacy of instruments measuring oral health literacy: a systematic review. *Oral Health Prev Dent*. 2014; 12(3): 201–7.
14. Sun L, Wong HM, McGrath CPJ. The factors that influence the oral health-related quality of life in 12-year-old children: baseline study of a longitudinal research. *Health Qual Life Outcomes*. 2017;15(1): 155
15. Pujol J, Bianco-Hinojo L, Martinez-Vilavella G, Canu-Martin L, Pujol A, Perez-Sola V, et al. Brain activity during traditional textbook and audiovisual-3D learning. *Brain Behav*. 2019; 9(1): e01427.
16. Leminen A, Verwoert M, Moisala M, Salmela V, Wikman P, Alho K. Modulation of brain activity by selective attention to audiovisual dialogues. *Front Neurosci*. 2020; 14: 436.