

EFFECTIVENESS OF ANIMATED VIDEO MEDIA IN ENHANCING ORAL HEALTH KNOWLEDGE AMONG CHILDREN WITH INTELLECTUAL DISABILITIES: A QUASI-EXPERIMENTAL STUDY

Devita Dea Sabilah¹, Sukarsih², Karin Tika Fitria^{2*}

¹Student of Dental Therapy Study Program, Politeknik Kesehatan Kementerian Kesehatan

²Jambi Lecturer of Dental Therapy Study Program, Politeknik Kesehatan Kementerian Kesehatan Jambi

*Corresponding Author: karintika.fitria@poltekkesjambi.ac.id

ABSTRACT

Background: Children with intellectual disabilities often face lower oral healthcare knowledge levels than their typically developing peers. This disparity arises from intellectual limitations and adaptive functioning challenges. Effective educational tools are crucial to improving the oral health knowledge of children with intellectual disabilities, and one such tool is animated video media.

Method: This study employed a quasi-experimental design, with a purposive sample of 32 respondents. The independent variable was the delivery of oral health education through animated video media, while the dependent variable was the knowledge of oral health maintenance. Data were collected using a questionnaire. Statistical analysis involved the Wilcoxon signed rank test and the Mann-Whitney test.

Result: Prior to the educational intervention using animated video media, the average knowledge score regarding oral health maintenance was 4.06. Following the intervention, the average score significantly increased to 9.62. Additionally, the distribution of the difference between the treatment and control groups in terms of oral health knowledge showed a mean difference of 24.25 compared to 8.75. Statistical analysis revealed a significant difference between the treatment and control groups ($P=0.000$).

Conclusion: This study demonstrates the effectiveness of animated video media in significantly improving oral health knowledge among children with intellectual disabilities. The findings underscore the potential of multimedia educational tools to bridge knowledge gaps and enhance oral health outcomes in this vulnerable population.

Keywords: intellectual disabilities; oral health; animated video media; knowledge enhancement; educational intervention

INTRODUCTION

Intellectual disability, or known as mental retardation, is a comprehensive term that describes a condition characterized by lifelong challenges in cognitive and adaptive development due to abnormalities in brain structure or function (Shea, 2012).

Children who have intellectual disabilities frequently have less oral healthcare knowledge compared to their typically developing counterparts. This discrepancy is a direct result of their cognitive limitations and difficulties in adaptive functioning (Shah *et al.*, 2022).

Oral health knowledge is a fundamental aspect of overall well-being, impacting an individual's ability to maintain proper dental hygiene and prevent dental issues. However, children with intellectual disabilities often

struggle to access and comprehend this essential information effectively. Intellectual disabilities encompass a range of conditions that affect an individual's cognitive abilities and adaptive functioning. These conditions, such as Down syndrome or autism spectrum disorders, can present significant barriers to learning and retaining oral health knowledge. Children with intellectual disabilities may find it challenging to process and remember complex information, making it more likely for them to experience dental problems (Omran *et al.*, 2019).

Children with intellectual disabilities face challenges in engaging in abstract thinking, often requiring concrete objects to facilitate their learning. They may struggle with memory retention and transferring acquired knowledge. Additionally, these individuals may encounter difficulties in

performing self-care tasks, including oral hygiene due to limited motor skills, which can hinder their ability to brush their teeth effectively. Maintaining focus on information can also be a challenge for them (Permata *et al.*, 2020).

Traditional educational methods, such as pamphlets or verbal instructions, may not be as engaging or accessible for them due to their unique learning needs. While, animated videos offer a creative and engaging approach to bridge this knowledge gap (Suharja, Februanti and Kartilah, 2019; Sukarsih *et al.*, 2022).

The utilization of effective educational resources becomes imperative in augmenting the understanding of oral health among children with intellectual disabilities, and one particularly promising tool in this context is animated video content. Previous research has indicated a significant relationship between animated videos and an increased Oral Hygiene Index (Dewi, Hakim and Oktiani, 2022). However, none have demonstrated its impact on the level of knowledge regarding oral health in children with intellectual disabilities. This article aimed to learn the effectiveness of animated video media as an educational instrument for enhancing oral health awareness of children who have intellectual disabilities.

METHOD

This study utilized a quasi-experimental design and involved a purposefully selected sample of 32 respondents. The independent variable in this research was the delivery of oral health education through animated video media, while the dependent variable was the level of knowledge pertaining to oral health maintenance.

A pack of questions on oral health knowledge was conducted and the content was validated by dental expert. The questionnaire was administered into small group to assess validity, followed by calculating the Cronbach's alpha coefficient to assess

reliability until a set of 15 questions of questionnaire are collected.

Sample were divided into two groups, a group of intervention and group of control. Both groups were given the pretest of the questionnaire. Oral health education using animated video were given to the intervention group, while in the control group were given orally, followed by post-test using the same questionnaire for both groups. The statistical analysis employed included the Wilcoxon signed-rank test and the Mann-Whitney test.

RESULT AND DISCUSSION

Based on the research, it was found that after the intervention, there was a significant improvement in respondents' knowledge following the education. Although in the intervention group, the improvement appeared to be much higher than in the control group, statistical tests indicated that both the intervention group and the control group showed significantly different post-test results compared to the pretest (table 1).

Table 1. Results of the Wilcoxon Test for Knowledge of Oral Health Maintenance Before and After Conducting Education Using Animated Video Media in Children with Intellectual Disabilities at Special School (SLB) N 1 Jambi City 2023

Group	Knowledge		p value
	Pretest	Posttest	
Intervention	4,00 (3-6)	9,50 (7-13)	0,000
Control	3,00 (2-5)	4,50 (2-6)	0,006

Analysis of table 2 showed that the effectiveness test of education using animated video media on knowledge of oral health maintenance in children with intellectual disabilities at SLBN 1 Jambi City revealed a significant difference with a p-value of 0.000. Therefore, it can be observed that the improvement in knowledge is more effective when using education through animated video media compared to the control group receiving

dental health education orally.

Table 2. Results of the Effectiveness Test of Education Using Animated Video Media on Knowledge of Oral Health Maintenance in Children with Intellectual Disabilities at Special School (SLBN) 1 Jambi City in 2023

Group	N	Mean Post-test	p value
Intervention	16	24,25	0,000
Control	16	8,75	0,000

Prior research has provided evidence that dental health education, particularly when delivered through the medium of video media, has the potential to significantly enhance tooth brushing skills in students who have intellectual or mental disabilities. This research underscores the importance of innovative and engaging educational approaches in oral health, especially when dealing with individuals with unique learning needs (Suharja, Februanti and Kartilah, 2019).

Addressing dental and oral hygiene challenges in children with intellectual disabilities can be effectively accomplished through dental and oral health education. Given the limited capacity for abstract thinking in intellectually disabled children, utilizing various forms of media becomes significant in enhancing the learning experience. This is because concrete, tangible resources are essential for enhancing the overall quality of their comprehension (Hanif and Prasko, 2018; Dewi, Hakim and Oktiani, 2022).

Although several studies showed supportive findings on the effectiveness of audiovisual aid in facilitating oral health education in children with mental disability, however, the literature lacks the fundamental understanding of the use of instructional media to educate parents/caregivers of children with intellectual disabilities about preventive oral healthcare. However using animated video can help simplify the difficult concept and technic of oral care so it will increase the engagement rate and attention for the audience (Morandini and Ramos-Junior, 2020).

The utilization of health education media through animated videos can increase the interest of the audiences and elucidate the conveyed information. This is attributed to its inherent capacity to enhance engagement through heightened visual appeal and

interactivity (Kuswareni, Adhani and Arifin, 2016).

A previous study also showed that not only the video can help special needs children, but also the parents or caregivers. The role of parents in teaching tooth brushing skills is very important to supervise their children's oral care and tooth brushing technic until their children can brush their teeth independently (Riyadi, Sri Gumilar and Keperawatan Gigi Poltekkes Kemenkes Jambi, 2020).

CONCLUSION

Our study highlights the effectiveness of animated video in enhancing oral health awareness among children with intellectual disabilities, emphasizing the capacity of multimedia educational resources to help in understanding oral health knowledge and improve oral health care in this susceptible group.

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