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IMPLEMENTATION OF MEDIA INOVATION FOR IMPROVING ORAL HEALTH MAINTENANCE BEHAVIOR IN PRESCHOOL STUDENTS IN TANJUNG VILLAGE, PAKIS AJI DISTRICT, JEPARA REGENCY

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ABSTRACT

Preschool-age children are one of the vulnerable groups to oral health issues. At this age, dental caries is a common oral health problem encountered. This is because the enamel structure of primary teeth in children is thinner compared to permanent teeth. Additionally, excessive consumption of cariogenic foods without balanced toothbrushing skills contributes to the faster occurrence of dental caries. To reduce the risk of severe dental caries, efforts are needed to improve oral health maintenance behaviors through oral health education programs. The success of oral health education can be influenced by the use of instructional media. Creative and innovative instructional media can enhance student motivation to learn. The aim of community service is to enhance the knowledge and skills of TK Putra Bangsa students in oral health maintenance. The program implementation involves stages of preparation, execution, and evaluation. The target participants include students, parents, and teachers of TK Putra Bangsa a in Tanjung Village, Pakis Aji District, Jepara Regency, Central Java. This activity took place from October 23 to 27, 2023. Data collection instruments include examination forms, hygiene index forms, and interview forms for parents and teachers. The results of this activity show an improvement in the knowledge of students, parents, and teachers regarding oral health maintenance efforts, along with the implementation of the daily school toothbrushing program.

Keywords: media innovation; preschool; oral health education; toothbrushing

Introduction

Preschool-age children play a crucial role in shaping their character and personality. During this age, children undergo rapid growth and development in intellectual, emotional, social, and spiritual aspects¹

Intensive stimulation during this period is essential for a child's growth and development. Development is a cumulative process, meaning earlier development serves as

the foundation for subsequent development. Therefore, any obstacles in earlier development can hinder future development. On the other hand, growth involves positive changes in biological, anatomical, and physiological aspects of humans^{1,2}. In dental health science, the preschool-age is a period at risk for oral health problems. Thin enamel layers, excessive consumption of sweet foods, and the lack of established oral health maintenance behaviors

are primary factors contributing to oral health issues in preschool-age children²

Another common issue contributing to oral health problems in preschool students is the lack of attention and low knowledge among parents regarding oral health. Parents often fail to provide education and instill healthy behaviors in their children during this crucial developmental period¹

Preschool age is an opportunity for children to practice maintaining their oral health in preparation for the eruption of permanent teeth. The hope is that when permanent teeth emerge, children will have independence and skills to care for them. If this period passes without intervention and the establishment of oral health habits, there is a greater risk of oral health problems when permanent teeth grow. Therefore, efforts to improve oral health maintenance behaviors need to be implemented early on³

One effort to enhance oral health maintenance behaviors is through oral health education. According to Minister of Health Regulation No. 89 of 2015 regarding dental health efforts, dental health education is carried out in schools by healthcare professionals and teachers. One behavioral intervention that can be implemented is brushing teeth together at school⁴

Brushing teeth is the most effective and efficient way to maintain oral health. Proper toothbrushing can eliminate plaque accumulation on tooth surfaces. Clean teeth, free from plaque, can reduce bacterial activity in the oral cavity, lowering the risk of oral health problems⁵

The community service partners are TK Putra Bangsa in Tanjung Village, Pakis Aji District, Jepara Regency, Central Java. The results of data collection and information revealed that students of TK Putra Bangsa in the academic year 2023-2024 have not received oral health education from either the Community Health Center (Puskesmas) or other institutions. Currently, TK Putra Bangsa does not have an ongoing dental health program. Therefore, in the managerial practice activities of dental and oral health therapists' graduate program students from Poltekkes Semarang, in

collaboration with the school, conducted community service activities with the aim of enhancing the knowledge and skills of preschool students in tooth brushing.

Methods

This community service activity was carried out at TK Putra Bangsa in Tanjung Village, Pakis Aji District, Jepara Regency, Central Java, from October 23 to 27, 2023. The aim of this activity was to improve the knowledge of TK Putra Bangsa students about oral health. The stages of this activity included preparation, implementation, and evaluation. The preparation stage involved obtaining permits, preparing materials, and designing the media to be used. In the implementation stage of community service, the following activities were conducted: (1) examination of oral health status and cleanliness,

(2) measurement of students' knowledge of oral health, (3) education for teachers, parents, and students, and (4) efforts to implement the daily toothbrushing program at school. The final stage of this activity was the program evaluation.

The facilities and infrastructure prepared for this activity included toothbrushes, toothpaste, mouthwash cups, toothbrush storage lockers, and providing a tap for students to brush their teeth.

Results and Discussion

The community service activities carried out at TK Putra Bangsa are integrated with managerial practices in Postgraduate students majoring in Dental and Oral Therapists at the Polytechnic of the Ministry of Health Semarang. This community service involved 28 students at TK Putra Bangsa with the following data:

Tabel 1 Data on the characteristics of TK Putra Bangsa Students

No	Variable	N	%
1	Gender		
	Male	18	35,7
	Female	10	64,3
2	Age		
	5 Years old	7	25
	6 Years old	13	46,4
	7 Years old	8	28,6

The table 1 shows the frequency distribution data of the characteristics of TK Putra Bangsa students who are male as many as 18 students (35.7%) while females totaled 10 students (64.3%). Based on age, the frequency of students aged 5 years was 7 students (25%), aged 6 years was 13 students (64.3%), aged 7 years was 8 students (28.6%).

Tabel 2 Frequency distribution of Hygiene index before and after intervention

Criteria	Before intervention		After intervention	
	n	%	n	%
Good	4	14,3	25	89,3
Poor	24	85,7	3	10,7

Based on table 2, the distribution of Hygiene Index of TK Putra Bangsa students before the intervention was 4 students in the good category and 24 students in the poor category. Whereas after being given the intervention, there were 25 students in the good category, and 3 students in the poor category.

Tabel 3 Frequency distribution of students' tooth brushing knowledge

Criteria	Before		After	
	Intervention		Intervention	
	n	%	n	%
Poor	-	-	-	-
Enough	16	57,1	4	14,3
Good	11	39,3	24	85,7

Table 3 shows that the knowledge of TK Putra Bangsa students before the intervention was 16 students in the enough category and 11 students in the good category, while after the intervention, 4 students in the enough category and 24 students in the good category.

Tabel 4 Normality test of Hygiene Index data and student knowledge

Variabel	data	N	Mean	P-value
Hygiene Index	Pre test	28	81,43	0,000
	Post test	28	95,71	0,002
Pengetahuan	Pre test	28	72,99	0,008
	Post test	28	86,60	0,000

Table 4 shows the results of the normality test for the PPHM index variable and students' tooth brushing knowledge have a p-

value <0.05 , meaning that the data is not normally distributed so that the effectiveness test is analyzed using a non-parametric test.

Tabel 5 T-test results of Hygiene Index values before and after intervention

Variable	data	N	Mean	P-value
Hygiene Index	Pre test	28	72,99	0,000
	Post test	28	86,60	

Based on table 5 shows that the results of the effectiveness test of paired data on student Hygiene Index with a p-value of 0.000 ($p < 0.05$), meaning that the Innovation Media "Denta Go" effectively improves the dental hygiene status of preschool children. before treatment the average value of Hygiene Index was 72.99 which increased to 86.60.

Table 6 T-test results of students' Knowledge score before and after intervention

Variable	Data	N	Mean	P-value
Knowledge	Pre test	28	81,43	0,000
	Post test	28	95,71	

Table 6 shows that the results of the effectiveness test of paired data on students' tooth brushing knowledge with a p-value of 0.000 ($p < 0.05$), meaning that the Innovation Media "Denta Go" is effective in increasing students' knowledge related to oral health. Before treatment, the average value of knowledge was 81.43 which increased to 95.71.

Discussion

Oral health is a key indicator of overall health. Oral and dental diseases can affect people of all ages, some diseases caused by a lack of maintaining oral and dental hygiene are dental caries and periodontal disease⁶. Knowledge is a factor that shapes a person's behavior. Lack of knowledge will result in poor behavior and attitudes towards maintaining oral health. Increase public awareness of the importance of oral health and provide understanding of ways to maintain oral health. One of the factors causing caries in children is a lack of knowledge about the timing of brushing teeth and how to brush properly⁷.

Table 2 shows that there is an increase in the level of dental hygiene (Hygiene Index) of TK

Putra Bangsa students. Before being given an intervention in the form of innovative media “*Denta Go*” there were 14.3% of students in the good category while after being given the intervention it increased to 89.3% of students in the good category.

Table 3 shows that there is an increase in tooth brushing knowledge of TK Putra Bangsa students. Where before the intervention of the “*Denta Go*” model only 39.3% with knowledge in the good category increased to 85.7%.

Behavior is a person's reaction to stimuli received from outside, which is divided into three domains, namely, knowledge, attitudes, and actions. Increased knowledge, attitudes and skills affect the dental and oral hygiene status of children. Oral health maintenance behavior affects a person's actions to maintain oral health, therefore efforts are needed to shape behavior from an early age⁸.

Appropriate behavior change strategies for preschool children can be carried out by providing dental health education using learning methods and customized media development⁹. Media is one of the factors that can influence the health education process, because it is a tool to facilitate the delivery of material, as well as oral health education media as a learning tool that must be well packaged, attractive and involve many senses to make it easier to remember¹⁰. The effectiveness and efficiency of the oral health education process is influenced by the accuracy and suitability of the use of learning methods and media, because the media used not only provides information, but also must provide experience¹¹.

One of the efforts to improve tooth brushing behavior that can be done is the innovation of developing a tooth brushing program in preschool children with the innovation media “*Denta Go*”, which is a model of changing the oral health behavior of preschool children that involves students actively as subjects and objects in the game so as to provide a fun learning experience. This aims to increase the knowledge of brushing teeth of preschool children so that it has an impact on their dental hygiene status so that it becomes optimal.

Conclusion

Managerial practice activities of dental and oral therapists in the form of community service at TK Putra Bangsa in Tanjung Village, Pakis Aji District, Jepara Regency, Central Java, have been carried out in the form of education for students, parents, and teachers using the “*Denta Go*”. Additionally, the implementation of a program to habituate daily tooth brushing at school was introduced. The dental health education conducted has increased the level of oral hygiene student and knowledge among students at TK Putra Bangsa.

After the completion of this activity, it is expected that TK Putra Bangsa can continue dental health education for students and consistently implement the tooth brushing program every day at school

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