



Empowering kindergarten and pre-school teachers in Jaddih, Bangkalan to prevent caries and boost children's dental clinic visits

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Abstract

Background: Dental cavities have become a significant issue in oral health. Among preschool-aged children, there is a high prevalence of dental cavities, affecting almost half of the population. However, only 2% of them receive treatment from a dentist.

Purpose: The goal of this program is to provide education and training for kindergarten and early childhood teachers on children's oral and dental health.

Methods: Providing education, training, and empowerment to kindergarten and pre-school teachers.

Result: The education and training activities conducted have improved the knowledge of kindergarten and pre-school teachers in Jaddih, Bangkalan.

Conclusion: Education and training activities in Jaddih, Bangkalan have improved teachers' knowledge and skills, empowering them to enhance the dental and oral health of their students.

Keywords: Oral Health, Dental Caries, Children, Pre-school Teachers, Good Health and Well-being

Introduction

Maintaining good oral health is crucial for enhancing the quality of human life ^[1]. The nutritional status of individuals is affected by the status of oral health conditions ^[2]. Poor oral health conditions can cause disruption of masticatory function leading to malnutrition. The presence of infections in the oral cavity also has the potential to spread to surrounding tissues and can even cause systemic infections ^[3]. Oral health also affects a person's self-confidence which has a psychosocial impact ^[4]. Efforts to maintain oral health will have an impact on improving systemic body health ^[5].

Dental caries is still a major problem in the field of oral health ^[6]. Based on research, the incidence of dental caries in 12-year-old children is still quite high, with an average DMFT (Decayed, Missing, Filled teeth) caries index score of 1.58 which indicates poor dental health with most caries never getting treatment ^[7]. A study mentioned that children with poor oral health tend to have poor performance at school compared to children with good oral health ^[8]. In preschool-aged children, there is a high prevalence of dental caries, reaching almost half of the population, but only 2% of them go to the dentist for treatment. This is accompanied by a lack of knowledge to brush teeth properly ^[9]. Based on WHO research, the prevalence of untreated caries in the 1-9 year old population in Indonesia is 46.9% ^[10]. Early treatment of caries lesions is needed such as fluoride application, restoration with GIC materials, composite resins, ART (atraumatic restoration treatment) and extraction is recommended if the lesion has extended to the pulp ^[11]. Based on research, the risk factors for early childhood caries are multifactorial, there are low parental

education, poor oral hygiene and prenatal passive smoking ^[12]. To increase parents' knowledge regarding the effects of consumption of sugary foods and drinks on the development of early childhood caries can be done by making education in the form of videos that are easily accessible ^[13]. Parents' education level is directly proportional to their concern for providing oral health care to their children such as understanding to provide pit and fissure sealant applications ^[14]. People with low education are less likely to come to dental health services for routine examinations and seek treatment, they tend to come to dental clinics when they are already in severe dental disease conditions ^[15].

Efforts to improve the oral health of the community can be carried out by health professionals, dentists and dental students by providing education and training on oral health ^[16]. Expanding Teledentistry-based curriculum content can be done to increase school students' understanding of oral health ^[17]. As a form of the government's seriousness in handling oral health, the Indonesian Ministry of Health launched the Indonesia Free of Caries 2030 program. However, the results of Riskesdas in 2018 show that the prevalence of dental caries in Indonesia is still quite high at 88.8%, where the age group 5-9 years of caries prevalence is 92.6%, and in the age group 10-14 years is 73.4% ^[18]. The high caries rate in children shows that one of the best caries preventive actions is to provide oral health education as early as possible, especially at an age before the first permanent tooth erupts at the age of 6-7 years ^[19]. The prevalence of dental caries is related to the level of knowledge about oral health, with education expected to change children's

dietary behavior to reduce the consumption of cariogenic foods and drinks [7].

Bangkalan Regency is a district in East Java Province. It is located at the westernmost tip of the island of Madura [20]. Based on the Riskesdas of East Java 2018, out of 35% of people in Bangkalan Regency who have dental and oral health problems, only less than 10% of people seek medical services for their dental and oral conditions. Moreover, Bangkalan Regency is in the 11th lowest position out of a total of 38 districts in East Java which have good tooth brushing behavior over the age of 3 years [21]. Jaddih Village is one of the villages in Socah District, Bangkalan Regency which is currently starting to show tourism potential and is becoming known to the public through Jaddih Hill limestone mining. Currently, there is no adequate data collection regarding the prevalence of caries in this district, especially for children at an early age. Therefore, a dental and oral health examination is needed which will be the basic data for referring patients to the public health center and also be used as a data reference for determining the health center's policy on dental and oral health programs, both preventive and curative for early childhood children in Jaddih, Bangkalan.

Eventhough there is not yet adequate data on the dental and oral health conditions of young children in Jaddih, providing education to children at an early age or at the age of changing teeth is one of the effective preventive measures to prevent caries. At an early age, children develop their personality by imitating role models, primarily parents and teachers. As second parents at school, teachers play an important role in promoting dental and oral health. Implementing dental and oral health education programs will increase children's awareness of the etiology, prevention, development and treatment of oral diseases and reduce the prevalence of dental caries at school age [22]. Therefore, knowledge about dental and oral health by teachers and parents is also an important factor in forming a good environment and habits in maintaining healthy teeth and mouth.

Method

This community service activity was carried out 25 Agustus 2023 at Jaddih Village, Bangkalan Regency, East Java. In implementing this program, The Community Service team collaborated with the Jaddih Community Health Center. The methods used in this community service activity were providing education, training, and empowering to the target audience. The programs carried out in this community service activity are:

(A) Providing education and training regarding simple dental and oral examinations for Kindergarten and Early Childhood teachers:

- Introduction to the general description of the anatomy of the teeth and mouth along with the functions of the organs in it such as the lips, gums, tongue and other soft tissues.
- Explanation of various disorders and diseases that occur in the teeth and mouth, especially those often experienced by children such as milk bottle caries, gingivitis, and stains on the teeth.

- Explanation of good and bad habits of children that have an impact on dental and oral health
- Explanation of various efforts to prevent dental and oral diseases, such as the correct way to brush your teeth, foods that can have good and bad impacts on dental and oral health, and checking dental and oral health regularly.
- Explanation and training on how to check dental and oral health and simple treatments that can be done in the school environment.
- Explanation and training on how to record and refer students' dental and oral health to the health center.
- Explanation and training on how to guide early childhood students to be able to play busy books about dental and oral health.

This activity is carried out by paying attention to and implementing health protocols during the Covid 19 pandemic.

(B) Training regarding simple dental and oral examinations for Kindergarten and Early Childhood teachers including dental and oral examinations, making records and referrals, and guiding children to be able to play busy book about dental and oral health:

- Practices that will be carried out by kindergarten and early childhood education teachers include.
- Simple dental and oral examinations.
- Practices carried out by kindergarten and early childhood education teachers include explaining various dental examination tools and their functions and conducting simple dental and oral examinations. Dental and oral examinations will be carried out in pairs between teachers, one teacher as the examiner and the other teacher acting as the student whose teeth will be examined.
- Making records and referrals.
- After carrying out simple dental and oral examination practices, kindergarten and early childhood education teachers are expected to be able to practice how to record various dental and oral health problems found and make referrals to the health center.
- Guiding early childhood children to be able to play busy books about dental and oral health.
- Kindergarten and Early Childhood Education teachers are expected to provide knowledge to students about dental and oral health and can increase students' enthusiasm to maintain their dental and oral health through various features presented in the busy book, including: matching tooth shapes, sorting good and bad foods for dental and oral health, how to brush your teeth properly, introducing the tools used by dentists and so on.

This activity is carried out by paying attention to and implementing health protocols during the Covid 19 pandemic.

(C) Providing education regarding dental and oral health for Kindergarten and early childhood students:

This activity was carried out at two kindergartens and two preschools within the Jaddih Health Center area. Education about dental and oral health was carried out in a simple way so that it was easy for early childhood

children to understand by using games, flip charts and songs that could increase children's enthusiasm in participating in educational activities. The education provided to kindergarten and preschool students included:

- Introduction to the tissues in the oral cavity such as teeth, gums and tongue along with their functions.
- Education on how to maintain dental and oral health regarding diet and good and bad habits for dental health, how to brush your teeth and recommendations to the dentist at least once every 6 months.
- Distributing the story book "Budi Sakit Gigi" to participating schools as educational material for students' dental and oral health.

After the education was carried out, kindergarten and preschool students were asked to immediately practice how to brush their teeth properly through joint toothbrushing activities. This activity is carried out by observing and implementing health protocols during the Covid 19 pandemic.

(D) Dental and oral health examinations for Kindergarten and early childhood students:

This activity was carried out at two kindergartens and two early childhood education schools which were the same as the educational activities on dental and oral health for kindergarten and early childhood students. The Community Service Team will conduct dental and oral health checks and record them in dental records which can be used as sample data for the health center to determine the level of dental and oral health of early childhood children in their area and can be used as a basis for determining policies on dental and oral health in the Jaddih Health Center area.

This activity can of course be carried out if the number of Covid-19 cases has been controlled and conditions in the field are declared conducive to conducting dental and oral health checks. However, if there is a force majeure in the form of an uncontrolled spread of Covid, then the dental and oral health check activity can be canceled for the sake of mutual safety and security.

(E) Evaluation at the end of the program by conducting pre-tests and post-tests on teachers. All of this programs were carried out by observing and implementing health protocols during the Covid-19 pandemic:

- Pre- and post-tests were conducted for kindergarten teachers after receiving educational materials on kesgilut and training on simple dental and oral examinations.
- Children's ability to brush their teeth will be evaluated before and after education through the OHI-S index.

(F) Partner participation (Jaddih Health Center):

- Assisting and facilitating the analysis process and field studies in formulating problems experienced by partners.
- Facilitating the socialization of community service activities in all kindergarten and early childhood education schools in the Jaddih Health Center area.

- Providing a place for education and training for kindergarten and early childhood education teacher representatives in the Jaddih Health Center area.
- Receiving and providing dental and oral health services for students referred by kindergarten and early childhood education teachers as cadres of the Kesgilut Response Teacher with costs in accordance with the health center policy.

(G) Evaluation of the success of PKM activities can be done through:

- Kindergarten and Early Childhood Education teachers are able to refer their students for dental and oral health services to the Jaddih Health Center as seen from the activity records in the "Kesgilut Responsive Teachers" book.
- Increased visits by early childhood children to the Jaddih Health Center Dental Clinic within 3 months after the completion of the PKM activities.

Result and Discussion

The education, training, and empowerment activities for "Guru tanggap kesehatan gigi dan mulut (Kesgilut)" at the Jaddih Health Center have been successful and effective. The program focused on educating and training preschool children about oral health, receiving positive feedback from 25 teachers and 50 students who participated. The initiative began with educating kindergarten and pre-school teachers about the basic anatomy and functions of the oral cavity, common dental issues in children such as milk bottle caries, gingivitis, and teeth stains, as well as preventive measures including proper brushing techniques, good and bad foods for oral health, and regular dental check-ups. Furthermore, the program included education on conducting oral health checks and providing simple treatments in the school environment, along with training children through interactive books about oral health. After receiving education, kindergarten and pre-school teachers were given practical exercises to conduct simple oral examinations, make records, and refer students with oral health problems to the health center. They were also tasked with guiding early childhood students to engage in activities promoting oral health, such as identifying different teeth shapes, sorting good and bad foods for oral health, proper teeth brushing techniques, and introducing dental tools. Following this, education for kindergarten and pre-school students was conducted, focusing on introducing the oral cavity tissues and their functions. The students were taught about maintaining oral health through proper diet and habits, as well as the importance of regular dental check-ups every six months. "Budi Sakit Gigi" storybooks were distributed to participating schools, and students practiced proper tooth-brushing techniques together. Subsequently, dental and oral health examinations were carried out for the students, with the results being recorded for reference and data analysis in developing oral health policies at the local health center. The participants showed great enthusiasm throughout the entire activity.

Based on the results of the pre-test and post-test conducted on kindergarten and pre-school teachers, it can be stated that the education and training activities that have been carried out increase the knowledge of kindergarten and pre-school teachers in the Jaddih, Bangkalan. This is evidenced by kindergarten and pre-school teachers being able to make

referrals for oral health services for their students to the Jaddih Health Center as seen from the activity notes in the "Guru tanggap Kesgilut" book and increased concern for maintaining oral health in children as evidenced by the increase in early childhood visits at the Jaddih Health Center Dental Clinic within 3 months after the service activity was completed.



Fig 1: Dental education for kindergarten and early childhood teachers



Fig 2: Education and training regarding simple dental and oral examinations for kindergarten and early childhood teachers



Fig 3: Our team in community service activities



Fig 4: Dental education and oral health examinations for kindergarten and early childhood students



Fig 5: Our team and kindergarten students

Conclusion and Suggestion

One of the efforts that can be done as a preventive measure for dental and oral health, especially for school-age children, is by providing dental and oral health education in "kindergarten" schools. Holistic and comprehensive education must be carried out on educators "kindergarten" school teachers, who are expected to be able to provide a positive influence on increasing awareness to maintain dental and oral health by parents of students. Not only teachers must receive dental and oral health education as parents of students at school, but students are also given education as early as possible to better understand and maintain their dental and oral health, by brushing their teeth properly and correctly. Education and training activities for "Guru tanggap kesehatan gigi dan mulut (Kesgilut)" in the Jaddih, Bangkalan were able to increase the knowledge and ability of teachers to be at the forefront in improving the dental and oral health of their students. The authors hope that educational and training activities regarding

dental and oral health can be carried out routinely as an effort to improve the dental and oral health of early-aged children.

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