

## Dental examination and dental health education for little star pre-school toddlers and young children

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### Abstract

Oral and dental problems in Indonesia is still very high. One of the most common oral health problems is dental caries. The incidence of dental caries in children reached 92.6%. So that efforts are needed to reduce the incidence of dental caries in children, one of which is through dental examinations and dental health education. Toddler group and pre-school toddlers were chosen because at that age dental health education needs to be instilled so that it is expected to have an impact on oral health behavior. impact on the behavior of maintaining oral health. The purpose of this activity is to provide an understanding of the parents of toddlers and toddlers towards oral health. The partner of this community service activity is little star, which is a pre-school community for toddlers and toddlers. Pre-school community for toddlers and toddlers with 40 participants. This community service begins with oral health examination activities by a dentist to the toddlers and toddlers of the little star pre-school group. Providing dental health education material was carried out by Faculty of Dentistry students of Kadiri University to parents of toddlers and toddlers. After the provision of material is carried out post-test. The results obtained in the dental examination were 32.5% of toddlers and toddlers had dental caries and 2.5% had fluorosis. Knowledge of parents of toddlers and toddlers after being given dental health education material shows as much as 90% of parents of toddlers and toddlers have a fairly good understanding. Therefore, with this community service activity is expected to foster children's behavior to maintain oral health children to maintain oral health.

**Keywords:** Dental Caries; Dental Health Education; Little Star Pre-School Community; Toddlers

### 1. Introduction

Oral health can affect the quality of human life. Based on data from the Global Burden of Disease Study in 2016 predicts that oral health diseases can affect 3.58 billion people in the world. One of the common oral health problems is the suppression of the incidence of caries. Globally, the World Health Organization (WHO) estimates that 2.4 billion people in the world suffer from permanent dental caries and 486 million children suffer from primary tooth caries (1). Survey data conducted by WHO also shows that children around the world experience dental caries as much as 60-90%. The Americas and Europe are the regions with the highest caries prevalence, while the Pacific and Eastern Mediterranean regions have low caries indices. Africa and Southeast Asia are also recorded to have low caries rates (2).

The proportion of oral health problems in Indonesia based on data from the Basic Health Research (Riskesdas) in 2018 shows that the biggest problem is damaged teeth, cavities, or sore teeth as much as 45.3%. The data also showed that the prevalence of dental caries in children aged 3-4 years was 81.1%, in children aged 5-9 years 92.6%, and in children aged 10-14 years as much as 73.4% (3). The Riskesdas survey results show an increase compared to the previous year.

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This is because the habituation of a clean and healthy lifestyle among children is still not optimal to prevent dental caries.

Dental caries is one of the most common oral health problems (4). Dental caries is formed because there is food residue in the form of glucose which is fermented by *Streptococcus mutans* bacteria, resulting in a decrease in the pH of the oral cavity. This condition can result in the process of demineralization of dental hard tissue hydroxyapatite and result in the appearance of carious lesions (5). This condition, if allowed to continue, will interfere with the quality of life and growth of children.

Various efforts need to be made to improve clean and healthy lifestyle education, especially oral health. Clean and healthy lifestyle education can be carried out in the realm of formal or informal schools. The role of parents is very important in providing guidance, direction, understanding, providing facilities and reminding children to get used to maintaining oral hygiene (6). Employment status and parental knowledge are factors that influence parental behavior in providing oral health education. Research conducted by Nurjanah (2019) shows that parental knowledge can affect the incidence of dental caries in children (7).

Based on this background, Faculty of Dentistry Kadiri University has the responsibility of providing oral health education through community service activities. In this community service activity, toddlers and toddlers of the little star pre-school group were chosen because it is considered that planting oral health will be optimal if done at an early age so that habits are formed in maintaining oral health. The purpose of this community service activity is to understand the parents of toddlers and toddlers about oral health. The community service partner chosen is the little star pre-school group because it represents the age group of toddlers and toddlers. The introduction should be typed in Cambria with font size 10. Author can select Normal style setting from Styles of this template. The simplest way is to replace (copy-paste) the content with your own material. In this section highlight the importance of topic, making general statements about the topic and presenting an overview on current research on the subject. Your introduction should clearly identify the subject area of interest.

## 2. Material and methods

### 2.1. Dental and Oral Examination

Before the dental and oral examination was carried out, the guardian parents filled in the informed consent of the action. Dental and oral examinations were carried out by dentists from the Faculty of Dentistry, Kadiri University to 40 toddlers and toddlers of the little star pre-school group. Dental and oral health examination includes the presence or absence of dental caries lesions, the location of dental caries lesions, and the classification of dental caries lesions. The data obtained was entered into medical record data in the form of an odontogram (Figure 1). Filling was carried out on the odontogram of deciduous teeth (51, 52, 53, 54, 55, 61, 62, 63, 64, 65, 71, 72, 73, 74, 75, 81, 82, 83, 84, 85). Odontogram filling follows the standard odontogram filling.

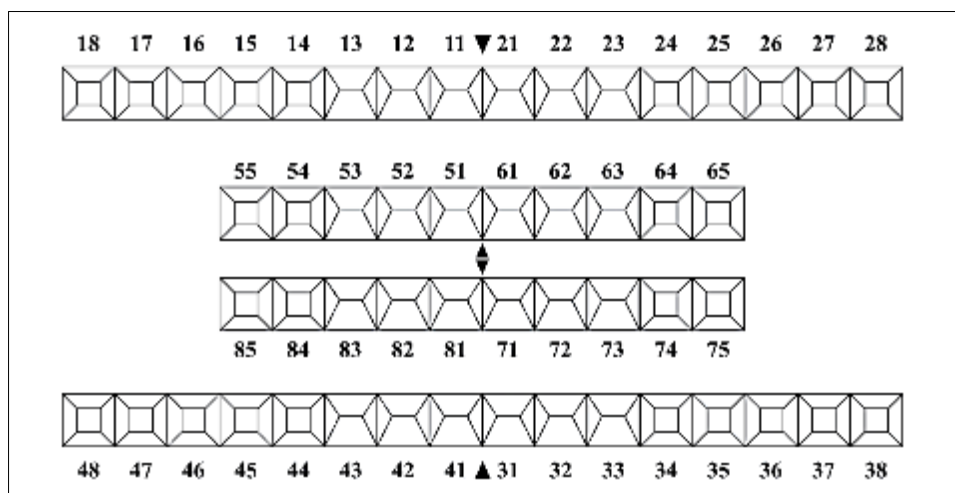


Figure 1 Odontogram in the patient's medical record

Oral health data in the form of dental caries incidence was then analyzed and the prevalence of dental and oral caries incidence was calculated. Prevalence is a diseased person from a population at a certain time with the calculation of caries prevalence using equation (1) as follows (3):

$$\text{Prevalence} = \frac{\text{Number of people with caries}}{\text{Population size}} \times 100\%$$

## 2.2. Providing Dental Health Education Materials

Parents of toddlers and toddlers of the little star pre-school group were given material about dental health education using power point media and lecture discussion methods. After giving the material, it was followed by filling out a questionnaire as a post test to measure the understanding of parents of toddlers and toddlers of the little star pre-school group. The data were then processed and analyzed qualitatively

## 3. Results and discussion

Community service activities were carried out on May 30, 2024 at J3 Building, Faculty of Dentistry, Kadiri University. Participants in community service activities are parents and guardians along with toddlers and toddlers of the little star pre-school group. The pre-school group was chosen as a community service participant because the pre-school age is the best age to instill clean and healthy living behavior (8). Parents play an important role in fostering and familiarizing clean and healthy lifestyles to children. Thus, parents also need to be given guidance related to dental health education.

Dental examination activities (Figure 2) showed that 32.5% of toddlers and toddlers in the Little Star pre-school group had dental caries. Dental caries is a disease of the hard tissues of the teeth that affects the structure of the enamel, dentin, and cementum of the teeth (9). The main cause of caries is multifactorial, namely the presence of a substrate in the form of glucose, *Streptococcus mutans* bacterial infection, and synergistic time. This etiology can cause a process of demineralization of hard tooth tissue resulting in damage to its organic substances. This can cause bacterial invasion to deepen and can cause dental pulp abnormalities (10,11).

Another finding in the oral examination was that 2.5% of toddlers and toddlers in the Little Star pre-school group had dental fluorosis. This condition is an abnormality of enamel structure in the form of mottled enamel due to high fluorine intake during tooth formation (dentinogenesis). Increased fluorine intake results in impaired ameloblast activity in matrix attachment and in the enamel maturation stage (12).



**Figure 2** Dental and oral examination activities

Another activity carried out in this community service is dental health education for parents (Figure 3). In this activity, material was given on how to clean teeth and maintain dental hygiene. The material is presented in power point media and the methods used are discussion and lecture. At the end of the session, a pre-test was given to determine the parents' understanding of oral health material. The results obtained in the pre-test showed that 90% of parents of toddlers and toddlers of the little star pre-school group had good knowledge and understanding of oral health. Parental knowledge has an important role in maintaining children's oral health. Knowledge is a major factor that can affect the quality of a clean and healthy lifestyle (13). The active role of parents in early childhood can be implemented through introducing children to dentists (14,15).



**Figure 3** Dental health education activity

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#### 4. Conclusion

Based on the description of the discussion above, the incidence of caries in toddlers and toddlers in the Little Star pre-school group is quite low at 32.5% and 2.5% were found to have fluorosis. Parents' knowledge also showed very good results, namely 90% of parents had good oral health knowledge. With the provision of dental health education carried out in this community service activity, it is hoped that it will be able to increase parental knowledge so that it plays an active role in reducing the number of dental caries in children.

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#### Compliance with ethical standards

##### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

##### *Statement of informed consent*

Informed consent was obtained from all parents of participants included in the study.

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