

Education on Oral Health Knowledge and Oral Hygiene of Junior High Schoolchildren

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Abstract: Indonesian children have the lack of knowledge and awareness of the dental and oral hygiene. The aim of the study was to describe oral health education to improve oral health knowledge, and oral hygiene of junior high school children. A quasi-experiment pre-post-test without control group design was conducted in private school in Jakarta, Indonesia. A total of 64 samples, 12 – 14-year-old schoolchildren were examined using the simplified oral hygiene index (OHI-S) and oral health knowledge questionnaire before and after oral health education. The mean OHI-S and oral health knowledge scores were compared and evaluated using the parametric t-test for dependent samples. Oral hygiene before education score was 2.04 ± 0.77 and improve after education score was 1.37 ± 0.59 ($p = 0.00$, 95% CI). Oral health knowledge before education score was 63.8 ± 1.28 and increased after education score was 83.8 ± 1.09 ($p = 0.00$, 95% CI). The oral hygiene status and oral health knowledge among junior high school children in Jakarta, Indonesia are poor. Oral health education can improve oral health knowledge and oral hygiene.

Keywords: OHI-S, oral health knowledge, oral hygiene

I. INTRODUCTION

In recent decades low-income countries experienced an increasing trend in dental caries among children, particularly recorded in 12-year olds, which is the principal WHO indicator age group for children. The risks of negative effects increase on children's life [1] Oral diseases are a public health problem because of their high prevalence and impact on individuals and society [2]. Over the last decades, there has been a steep increase in monitoring oral health trends. Oral health is very important and it is necessary for children and young people to know certain things about oral hygiene [3]. The oral health knowledge of the rural schools in western China was generally poor, whereas they held very positive attitudes toward oral health [4].

In Indonesia, the behaviour of the population aged 10 years and above most in the habit of brushing their teeth every day and increased (2007: 91.1%, 2013: 93.8%). Of this, only 2.3 % (2007) and 7.3% (2013) were brushing their teeth properly (after breakfast and before bedtime). This happens because of lack of knowledge and awareness of the dental and oral hygiene [5]. Preventive dentistry has traditionally emphasized improvement of oral hygiene. School-based programs, often delivered by dental hygienists or other

health educators, are usually limited to dental knowledge provision [6].

Dental professionals have largely imparted oral health education in schools. Considering the substantial cost of this expert-led approach, the strategies relying on teachers, peer leaders and learners themselves have also been utilized. However, the evidence for the comparative effectiveness of these strategies is lacking in the dental literature [7]. The present study was conducted to describe the effectiveness of oral health education to increase oral health knowledge and oral hygiene in junior high school children.

II. METHODS

The study was conducted with the quasi-experiment pre-post-test without control group design from March to July 2016. A total of 62 students were selected by purposive sampling aged 12 to 14 year-olds. Sample criteria were (1) students of grade 7 MTS Hidayatut Thalibin Cilandak Tengah Jakarta Selatan, (2) never received oral health lessons in the last one year, and (3) take the pre-test and post-test. The technique of data collection was conducted and completed a questionnaire twice, during the before and after oral health education with an interval of time is 14 days. The general information of the sample included oral health knowledge

before and after education, OHI-S before and after education were recorded.

First, two questions which were relative to background data, age, and sex. In order to evaluate students' oral health knowledge, the questionnaire contained items on the effects of brushing and using fluoride on the dentition. The meaning of bleeding gums and how to protect against it, the meaning of dental plaque and its effects, the number of deciduous and permanent teeth, the effect of pastries and refreshments on the dentition and the effects of carries on the appearance. Referring to the rating scale the level of knowledge are less good if correct answers are < 80%, and good if correct answers ≥80% [8].

The OHI-S was determined by using a disclosing tablet. For its calculation, six specific teeth were evaluated (vestibular surface of the first upper molars, upper right central incisor and lower left central incisor; and lingual surface of the lower first molars), indicating a minimum value of 0 and a maximum value of 3. The average oral hygiene index was obtained by summing the values found and dividing them by the number of surfaces examined. The outcome was evaluated using a scale to finally determine the student's OHI-S: good when submitting a score from 0.0 to 1.2, moderate between 1.3 and 3.0 and poor when submitting a score from 3.1 to 6.0 [9].

Descriptive statistics were obtained frequency distribution, standard deviation, means were calculated. The mean oral health knowledge and OHI-S scores were compared and evaluated using the parametric t-test for two dependent samples. The data were analyzed using computer software.

III. RESULTS

Respondents characteristics are shown in Table 1. Respondents were aged between 12 and 14 (mode 13). In this study, before treatment with oral health education, the students showed a moderate oral health condition (78.1%), a good condition (12.5%) and less good of oral health knowledge (87.5%). After being given treatment, oral health condition showed moderate (40.6%) and good (57.8%) and improved oral health knowledge (good: 81.3%).

TABLE I
RESPONDENTS CHARACTERISTICS

Variable	Total	
	n	%
Age		
< 13 yo	16	25
≥ 13 yo	48	75
Sex		
Boys	30	46.9
Girls	34	53.1
Knowledge before education		
Good	8	12.5

Less good	56	87.5
Knowledge of education		
Good	52	81.3
Less good	12	18.8
OHI-S before education		
0.0 – 1.2 (Good)	8	12.5
1.3 – 3.0 (Moderate)	50	78.1
3.1 – 6.0 (Poor)	6	9.4
OHI-S after education		
0.0 – 1.2 (Good)	37	57.8
1.3 – 3.0 (Moderate)	26	40.6
3.1 – 6.0 (Poor)	1	1.6

Differences oral health knowledge before and after education shown table 2. The mean oral health knowledge before education score was 63.8 ± 1.28 and increase after education score was 83.8 ± 1.09 . Briefly summarized, oral health education was associated with increase oral health knowledge in junior high school children ($p = 0.00$, 95% CI).

TABLE II
DIFFERENCES ORAL HEALTH KNOWLEDGE
BEFORE AND AFTER EDUCATION

Oral health knowledge	Mean	St. Deviation	P value (95% CI)
Before education	63.8	1.28	0.00
After education	83.8	1.09	

Differences oral hygiene before and after education shown in table 3. The mean oral hygiene before education score was 2.04 ± 0.77 and improve after education score was 1.37 ± 0.59 . Oral health education was improved oral hygiene in junior high school children ($p = 0.00$, 95% CI).

TABLE III
DIFFERENCES OHI-S BEFORE AND AFTER
EDUCATION

OHI-S	Mean	St. Deviation	P value (95% CI)
Before education	2.04	0.77	0.00
After education	1.37	0.59	

IV. RESULT AND DISCUSSION

The findings in this survey indicated that the students in the junior high school were in a poor oral health status and poor of oral health knowledge before treatment with oral health education. Improvement through education is able to match the conditions in previous research conducted in Castro, Los Lagos region, the level of oral hygiene in 12-year-

old students was observed that 59.5% of the students presented moderate hygiene (2).

Oral health promotion can be achieved through education using various approaches including mass media health education campaigns. Mass media campaigns might increase oral health knowledge and perhaps could lead to desired behavior changes and prevention of oral diseases [10]. Many studies have reported an association between oral health knowledge and oral health status. Oral health knowledge should be enhanced via increased oral health education among children to improve their oral health status [4]. Oral health education program increasing knowledge, attitudes, and practices regarding oral health among schoolchildren in Bangladesh [11]. In this study, oral health knowledge before education increased after education score was on junior high school children in Jakarta, Indonesia. This result is better than the level of knowledge of rural children in Shaanxi, western China, only 5.3% had accurate knowledge among 12- to 15-year-olds, scores of boys and girls were similar [4].

OHI-S (The simplified oral hygiene index) has been widely used to evaluate the level of oral cleanliness in this study. OHI-S was chosen for this study because very easy to use since the criteria are objective, the examinations can be carried out quickly and a high level of reproducibility is possible with minimum training. In this study, OHI-S student high school can improve with oral health education. Oral hygiene before education score improved after education.

A cross-sectional study was carried out to determine the degree of oral hygiene, periodontal status and treatment needs among 12-year-old schoolchildren from the city of Castro, Los Lagos Region, Chile, during March and April 2014 found a total of 242 students were evaluated, out of whom 129 were women and 113 men. Regarding oral hygiene, it was observed that 59.5% of the students presented moderate hygiene and good 23.6% [2]. The result is a difference compared with the results of this study. In this study before education for the student was observed that 78.1% moderate and 12.5% good and after education was observed that 40.6% moderate and 57.8% good.

Education on oral hygiene provided by teachers of the subject should be included in the school programs. Education acquired by the children should be followed up carefully, and to do this, parents should go on routine control visits to the dentist with their children [12].

Many factors influence the oral health knowledge of junior high school students, whereas in this study are not all factors were examined, so it needs to be explored in more

depth in future studies. The study involved 64 subjects were limited to the students of a private junior high school and no representatives of the public school so the results can't be generalized to represent a large group of subjects throughout junior high school children.

V. CONCLUSIONS

Oral health knowledge and oral hygiene among junior high school children in Jakarta, Indonesia can be improved through an oral health education program.

ACKNOWLEDGMENT

This study is based on the paper of scientific carried out by Ismira Dewi Hasannah as a requirement for obtaining the degree of Bachelor in Dental Nursing at Politeknik Kesehatan Kemenkes Jakarta I in 2016

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