

Flash Card Training for Dental Hygiene Cadre of Elementary School in Mandolang, Minahasa

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ABSTRACT: As many as 25.2% of children aged 10-14 years have dental and oral problems in Indonesia. This condition can affect their degree of health in the process of growth and development even their future. Based on RISKESDAS (Indonesia Basic Health Research) in 2007, 80% people suffered from dental caries, and 90% of them were children, showed that a group of children aged 10-14 years had problems with dental and oral health around 20.6%. In North Sulawesi the percentage of children aged 10-14 years that brush teeth every day is 95.7%, proper brushing behaviour is only 3.3%, while those who brush their teeth properly are only 1.7%. The research method was quasi experiment with pre-test and post-test designtime series. The population was class IV students of Kalasey State Elementary School and Buntong Elementary School in Mandolang, Minahasa Regency, amounting to 61 students, taking samples with purposive sampling technique. Paired sample t-test was used as the data analysis. The results of the study showed that the Oral Hygiene Index (OHI-S) before the UKGS (School Dental Health Unit), the highest criteria were in "intermediate" with 42 respondents (68.9%), meanwhile 10 respondents (16.4%) were in bad criteria and those in good criteria were as many as 9 respondents (14.8%). After the training of UKGS cadre, the OHI-S is changed. The highest change was in the criteria of good i.e. 33 respondents (54.1%), intermediate was in 28 respondents (45.9%), while the criteria for bad were not found. The results of the paired sample t-test OHI-S value mean = 1.068 before and after being given UKGS training, SD = 0.811 t-count = 10.284 > t-table = 2 df = 60 and p value = 0,000 < α 0.05. It can be concluded that there is effect of UKGS cadre training by using flash cards on the dental and oral health status of Kalasey State Elementary School students and Buntong Inpres Elementary School, Madolang District, Minahasa Regency.

KEYWORDS: Dental health, Flash card, Mouth, Training, UKGS cadre

I. INTRODUCTION

Oral and dental health in Indonesia still needs special attention from dental and oral health workers. This is because most people in Indonesia ignore their own dental and oral health, including elementary school age children. The group of elementary school age children is a group that is susceptible to dental and oral diseases so that it needs to be considered and prevented properly and correctly. As many as 25.2% of children aged 10-14 years have dental and oral problems in Indonesia. This condition can affect their degree of health in the process of growth and development even their future [1].

The effort to overcome dental health problems in children is the School Dental Health Unit (UKGS) program, which is one of the dental and oral health care programs in health centres and under the supervision of the School Health Unit program. UKGS provides services in promotive, preventive, curative, and rehabilitative forms aimed at school-aged children in the target schools aiming to get a healthy generation, but dental health status at 12 years old is still not satisfactory. The UKGS program focuses on counselling and mass toothbrushing movement as well as dental and oral health check-up for each student. Primary school age is chosen because it is an important age period for human development, at this age children experience rapid changes in receiving information, remembering, making excuses,

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and deciding actions. At this age children begin to learn about all their personal competencies [2]. Based on RISKESDAS in 2007, it was shown that in the group of 10-14 yearsold having problems with dental and oral health in 20.6% and there was an increase in RISKESDAS 2013 to 25.2% of children aged 10-14 years having problems with dental and oral health. Results of RISKESDAS in 2013 showed that the prevalence of caries population in Indonesia was 72.6%, while the population with dental and oral problems receiving treatment was 31.1% and tendency of DMF-T 4,5. The data also shows that DMF-T in 12-year-olds is 1.38, while WHO expects Global Goals for Oral Health 2020, targets Decay, Missing, Filled-Teeth (DMF-T) in 12-year-olds <1[3]. The high number of morbidities in oral cavity diseases, especially those related to the incidence of dental caries, is the background for School Health Unit or UKS, namely through the formation of a small cadre of dentists. School Health Unit (UKS) is a society public health aimed at the school community, namely students, teachers and other school staffs. The things that underlie the need for school health unit are school age group(6-18 years), is a large part of Indonesia's population ($\pm 29\%$), estimated that 50% of these are school children. Secondly, children are at the level of growth and development so that they are still easily fostered and guided. Thirdly, health education through school communities turns out to be the most effective among existing efforts to achieve healthy community habits in general, because the percentage of high school community is organized so that it is more easily achieved, sensitive to education and renewal, and can spread a modernization [4].

II. RELATED WORK

Dental and oral diseases often found in society are caries and periodontal disease that is stated 63% of Indonesia people suffer from active dental disease or the dental disease hadn't been treated yet. This is shown by the statistics 22.8% of Indonesia people that didn't brush their teeth and only 8.1% of 77.2% brush their teeth on time [5]. Caries is a disease on the tooth hard tissue which is indicated by demineralization on the hard tissue itself and the damage on its organic substance [6].

In the activity of learning, media is an important tool to communicate. A learning process is said to be a system because there are corresponding components in order to achieve the goal[7]. Dental health education for elementary school students is a way to promote healthy oral and dental. Research in SD Inpres Lapangan shows before the training of brushing, the plaque index was in intermediate category, while after the training, the index was increased to a good category [8]. To measure the oral dan dental health, it is used index namely OHI-S. It is a number based on the object research showing clinical condition at time of the checking[9]. According to [10], dental and oral health service is for maintaining and increasing people's health level in form of dental care integrated.

The purpose of UKGS is divided into three points, those are achieving the optimum level of dental and oral health of students, with the specific aim of increasing knowledge, attitudes and actions in maintaining dental and oral health, increasing participation of teachers, little doctors, promotive-preventive parents, and fulfilling dental and oral medical services students who need it [11]. Secondly, is trying to raise awareness and confidence that to improve dental health needs maintenance of oral hygiene and lastly is striving for elementary school children to maintain the hygiene of their mouth at home (habit formation).

The targets for the implementation and guidance of UKGS include; primary target consist of students or kindergarten-elementary school-junior high school and high school students, secondary targets include teachers, health workers, education managers, parents and coaching team of school health unit in every level). Last is the tertiary targets which includes education institutions ranging from pre-school level to senior high school, including religious schools and Islamic boarding schools in their neighbourhood[12].

III. METHOD

This study aims to determine the effect of UKGS cadre training by using flash card media on the dental and oral hygiene of primary school students in the working area of Tateli Health Center, Mandolang District, Minahasa Regency. The instrument in this study used a set diagnostic tool, and the material was in the form of disclosing solution,

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the recording format for the results of dental and oral hygiene examinations (OHI-S). The type of research used is quasi experiment with the pre-test and post-test design time series without the control group. The research variables, namely flash card media, is independent variable, while the dependent variable is the dental and oral hygiene status of elementary school students. The population in this study were fourth and fifth graders of Kalasey State Elementary School and Montong Elementary School in the working area of Tateli Public Health Center, Mandolang District, Minahasa Regency, amounting to 80 students. The sampling technique was purposive sampling with inclusion criteria of:

- a. Students are not included in the top 5 in the class
- b. Not sick
- c. Present at the time of the study

while the exclusion criteria are:

- a. Students have the top 5 in the class
- b. Students are sick at the time of the study
- c. Students were not present at the time of the study

The data analysis used two, i.e. Univariate analysis, namely to describe each variable or to be examined and Bivariate analysis used for determining the effect of two variables, namely the independent variable and the dependent variable using the t-Test.

IV. EXPERIMENTAL RESULTS

The distribution of respondents according to sex of Kalasey State Elementary School students and Buntong Inpres Elementary School Minahasacan be seen in table 1.

Table 1. Distribution of respondents by gender students of Kalasey State Elementary School and Buntong Inpres Elementary School in Minahasa

| Gender | Frequency | Percentage (%) |
|--------|-----------|----------------|
| Male | 38 | 62.3 |
| Female | 23 | 37.7 |
| Total | 61 | 100 |

Based on table 1, it can be seen that the number of male respondents is bigger than female respondents in which the male got 38 respondents (62.3%) while the female only got 23 respondents (37.7%). Thus the total frequency namely the respondents involved is 61 persons.

The distribution of respondents according to the age of students in Kalasey State Elementary School and the Buntong Inpres Elementary School Minahasacan be seen in table 2.

Table 2. Distribution of respondents by age students of Kalasey State Elementary School and Inpres Elementary School Minahasa Regency

| Age (Year) | Frequency | Percentage (%) |
|------------|-----------|----------------|
| 9 | 2 | 3.3 |
| 10 | 24 | 39.3 |
| 11 | 30 | 49.2 |
| 12 | 5 | 8.2 |
| Total | 61 | 100 |

Based on table 2, it can be seen that the most respondents were 11 years old with 30 respondents (49.2%), followed by 10-year-old respondents totalling 24 respondents (39.3%), then 12 years old totalling 5 respondents (8.2%) and 9 years old with 2 respondents (3.3%). The distribution of OHI-S before and after the training of dental health cadres in school of Kalasey State Elementary School and Inpres Elementary School Minahasa Regency can be seen in table 3.

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Table 3. OHI-S Distribution before and after cadre training

| Age (in Year) | Frequency | Percentage (%) |
|----------------|-----------|----------------|
| Before: | | |
| Good | 9 | 14.8 |
| Intermediate | 42 | 68.9 |
| Bad | 10 | 16.4 |
| After: | | |
| Good | 33 | 54.1 |
| Intermediate | 28 | 45.9 |
| Bad | 0 | 0 |
| Total | 61 | 100 |

Based on table 3, OHI-S before the training of dental health cadres in Kalasey State Elementary School students and Buntong Inpres Elementary School Minahasa, it was seen that the most result was "intermediate" OHI-S with 42 respondents (68.9%), compared to the "good" criteria with 9 respondents (14.8%) and "bad" for 10 respondents (16.4%), while the OHI-S criteria after the training of dental health cadres with the most criteria of "good" amounted to 33 respondents (54.1%), compared to the criteria of "intermediate" 28 respondents (45.9%), and for bad criteria there is no (0%). The bivariate sample analysis of paired t-test OHI-S before and after the training of dental health cadres in Kalasey Elementary School and Inpres Buntong Elementary School, Minahasa Regency can be seen in table 4.

Table 4. Results of analysis on Bivariate Paired Sample t-Test OHI-S before and after dental health cadre training

| Cadre Training | Mean | SD | SE | t calculated | df | P Value | N |
|------------------------------------|-------|-------|-------|--------------|----|---------|----|
| Before training and after training | 1.068 | 0.811 | 0.103 | 10.284 | 60 | 0.000 | 61 |

Based on table 4 the results of the bivariate paired sample OHI-S t-test before and after the dental health cadres training obtained mean 1.068 with a standard deviation of 0.811 in which counting of $10.284 > t_{table} = 2$ at $df = 60$ with a significant value of $0.000 < \alpha 0.05$ at the significance level of 95%.

Based on the results of the study, it was found that the level of dental and oral hygiene (OHI-S) prior to the training of dental health cadres using flash card media was in intermediate OHIS criteria that was still above 50% which was obtained 68.9% (42 respondents), then followed bad criteria 16.4% and criteria (10 respondents), good in 14.8% (9 respondents). When after the training of dental health cadres, there is a change in the value of OHI-S or a decrease in the value of OHI-S on the criteria of good and intermediate, which means there has been an increase in the degree of hygiene and mouth of students of Kalasey State Elementary School and Buntong Inpres Primary School in Mandolang District Minahasa Regency.

In improving the degree of dental and oral health in this case dental and oral hygiene, besides the internal factors, external factors also have an important role that we must pay attention especially by maintaining dental health in the form of methods and techniques of brushing teeth properly. The existing research shows that when learning is influenced by external events, those events must support the use of mental processes needed for learning purposes by students. The specifications for external events according to [13] stated that the instructional method for example is planned general instructional learning methods in the form of examples, interactive practice exercises. Flash card media includes visual media that presents graphics especially dental and oral health and contains a little material that can be read directly by the presenter. From a previous study by Mousavi cited by [13] that it was proven that the presentation

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of new science concepts for students both in auditory and symbolic visual modes produced more efficient (faster, easier) learning from information presented both in the media itself for high visual abilities and low prior knowledge [13]. Based on the analysis of the paired sample t-test, there was a significant difference between the OHI-S values before and after training for dental health cadres of Kalasey Elementary School and BuntongInpres Elementary School in Minahasa Regency in which the mean results before training was conducted for dental health cadres 2.314 and after training for dental health cadres, it was going 1.246, the OHI-S value of 1.068 has been reduced by standard deviation = 0.8111, while to know the effect of UKGS cadre training using flash card media on dental and oral health status (OHI-S) Kalasey State Elementary School students and BuntongInpres Elementary School can see the paired sample test results obtained by t-count value $10.284 > t\text{-table}$ which is 2.00 95% significant level in df 60 where $p = 0.000$ which means there is influence of cadre training UKGS using flash card media on dental and oral health status (OHI-S) a student at the Kalasey Public Elementary School and the Minahasa District BuntongInpres Elementary School, thus the hypothesis raised is acceptable.

In [14], the development of science and technology encourages efforts towards renewal in utilizing technology in the implementation of learning, the use of learning media is an inseparable part of the learning process especially to achieve learning itself. The presence of media in learning is also said to help improve student understanding, presentation of data / information more interesting and reliable, facilitate interpretation. In [15], based on research findings revealed that the cognitive function of visual media through visual images or symbols can accelerate the achievement of learning objectives to understand and remember the messages contained in the visual image or symbol. Flash card media is a media that presents visual images / symbols that can be presented by anyone, including students in delivering materials about dental and oral health. In this study, flash card media is an instrument designed in training UKGS cadres used by students as dental health cadres. In [16] study that the use of flash card media is very appropriate to improve children's cognitive development and train children's involvement in learning.

Regarding the improvement of dental and oral health, it is necessary to have knowledge and understanding of how to maintain dental health through UKGS involving students so that behavioural changes are expected from those who do not know and who cannot become able to independently carry out health maintenance efforts. teeth and mouth by brushing teeth regularly and well, which is at least 2 times a day after breakfast and before going to bed at night, reducing sweet and easily attached foods. If it is done continuously, it can be ascertained that students can avoid diseases due to poor oral hygiene, especially dental caries, gingivitis and periodontitis. According to Mulyani (2008), calculus can cause various gum diseases and this condition can continue inflammation in the tooth supporting tissue (periodontitis) and if it is not immediately followed up it will cause the teeth to falter and eventually be fallen out.

V. CONCLUSION

Based on the results and discussion of the research "The Effect of UKGS Cadre Training Using Flash Card Media on the Dental and Mouth Health Status of Elementary School Students in the Working Area of Tateli Health Center in Mandolang District, Minahasa Regency", it was concluded that there was an influence of UKGS Cadre Training Using Flash Card Media on Dental and Oral Health Status of Primary School Students in Mandolang District, Minahasa Regency.

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