Effectiveness of Training on the Improvement of Knowledge and Dental Health Care Ability

I Made Budi Artawa, I Gede Surya Kencana, I Nyoman Gejir, Ni Ketut Nuratni, Ni Made Sirat

Lecturer, Department of Dental Nursing, Health Polytechnic of Health Ministry, Denpasar, Indonesia

ABSTRACT: Brushing ability can be increased through training using appropriate media and methods. The method of this study was action research. It took place in SDN 2 Rijasa Tegal Linggah Penebel Tabanan, in August until September 2015. The population was 40 students. The data was collected using questionnaire, brushing ability observation, OHI-S index and analysed using Paired Sample T-test. The result shows the average of knowledge before the training was 4.30, after 11 days is 5.02, and after 21 days is 8.62. Those who brush teeth properly is increased from 0% to 17.50% after 11 days, 85% after 21 days. The dental hygiene before training was intermediate, while afterwards is good. Paired Sample test value is Sig = 0.002, shows mean difference on knowledge level, ability before and after the training. As the conclusion, the socialization and training using audio-visual media and edutainment is effective on the knowledge and ability improvement.

KEY WORDS: Audio-Visual, Dental Health, Edutainment, Improvement, OHI-S, Training.

I. INTRODUCTION

Oral and dental disease is a public health problem today, especially periodontal tissue disease and carious teeth. Both of these diseases will cause interference with the masticatory function, so it can interfere with the digestion and absorption of food [1]. The statistical data shows that dental and oral diseases almost affect everyone. This disease reaches more than 80% of children in developed and developing countries. Oral and dental disease in developing countries in adults is worse, due to the accumulation of various untreated diseases [2]. The results of the Basic Health Research (Indonesian Basic Health Research) in 2007 showed that most people (91.1%) had brushed their teeth every day, but only a small proportion of society (7.3%) brushed their teeth on time, i.e. in the morning after breakfast and the night before going to bed. The population who had dental and oral health problems in the Province of Bali in 2007 was 22.5%, received treatment from dental medical personnel as much as 42.4%, and 1.7% lost their original teeth. The prevalence of dental caries in Bali is 56.8%. The results of the study at the Sukawati I Gianyar Health Centre showed that, of the 40 study samples, only one person (2.5%) behaved properly with brushing. The situation indicated that the joint brushing program needed to be improved through dental health education using the right media and method [3].

Dental and oral health status indicators have been established which refer to the Global Goals for Oral Health 2020 developed by FDI and WHO. One of the technical programs developed by the Department of Non-Communicable Disease Prevention and Health Promotion is to suggest that countries in the world develop the dental and mouth disease prevention policies and improve dental and oral health promotion efforts, especially for school-age children and adolescents [4]. One form of health education is health training. Health education is an opportunity planned for everyone to be able to learn about health problems, and make changes voluntarily through their behaviour. Health education programs involve providing information, exploring values and attitudes, making decisions, and practicing ability that enable behavioural change [5].

Good dental health training should use appropriate methods and media, both in accordance with the material provided and with the objectives of the training itself [6]. The use of assistive devices in the form of communication media is needed in the counselling activities [7]. The use of media through television is effective for conveying messages to targets, because today most of the time is spent by children watching television [3]. The forms of edutainment learning are diverse, one of which is learning by playing. Playing is one of the activities to please, playing is often helped by certain tools. In essence, playing is an effort to make children happy, comfortable, and excited. Playing besides causing pleasure is also beneficial for the development of children, so it is very important to combine learning by playing.
especially in children [8]. The forms of training tools are such as; films, sound slides, television broadcasts in which all of them aim to facilitate achieving communication goal [1].

The results of interviews with the head of SDN 2 Rijasa, TegalLinggal, Penebel, Tabanan Regency obtained information that the school had never been educated by dental health workers. The UKGS (School Dental Health Unit) implementation at the school was only limited to dental health screening. Based on this information, the researchers wished to carry out innovative training efforts in accordance with the development of child psychology, namely by utilizing audio-visual media and edutainment methods. The problem indicated in this research is whether counselling and training using audio-visual and edutainment media can effectively improve the knowledge and ability of students of SDN (Elementary School) 2 Rijasa, Penebel, Tabanan about maintaining dental and oral health. The purpose of this study was to find out the effectiveness of counselling and training using audio visual media and edutainment methods in improving the knowledge and ability to maintain dental and oral health of students of SDN 2 Rijasa, Penebel, Tabanan.

II. RELATED WORK

Dental and oral health can impact a person’s quality of life. Dental caries is still becoming the most chronic disease of childhood. Dental and oral disease can defect systemic health. The failure of caring for the dental health may increase the risk of serious health. Reducing the risk of dental and oral disease can be done by engaging the patients and families that it makes oral health prevention care is more feasible. One way to do is by the primary care teams that have skills as well as the relationship to do the dental health care management [9]

People who care for their dental health usually check their teeth to the dentist or is mentioned as asymptomatic care, while those who check for their teeth after they experienced dental disease is called as symptomatic visit. The supply of dental care in each country may be different that makes the higher the regional deprivation level, the higher the tendency for the symptomatic visit rather than regular visit for a dental check [10] in which children in families with low incomes can only go to the dentist rarely or even have no caries treatment [11]. The benefit of caring for a dental health is that makes people younger, wealthier, excellent good health and not missing the permanent teeth [12] and it is very important to implement since childhood.

School is the ideal setting to reach children in which they build families and communities there. During their childhood, dental health behaviour can be developed through also attitudes. Children are receptive to new information and when the healthy dental habits are established, it will give them a great impact to adopt healthy lifestyle [13]. One strategy to reach children at high risk dental disease is by the school-based program to serve oral health education, prevention and treatment for the children [14]. Dental health service at school makes students are able to access a broad range of services in a safe, familiar environment and at minimal or no cost for their families [15].

III. MATERIAL AND METHOD

The method of this research was action research. The research was conducted in SDN 2 RijasaTegalLinggalPenebelTabanan, held from August to September 2015. The population of this study was all students of class I to class VI SDN 2 Rijasa totalling 40 students. The collected data included knowledge with questionnaires, data on brushing ability observation, dental and also dental and oral hygiene data with OHI-S index. The data was processed by Screening, Editing Coding, Tabulating. The data analysis was using descriptive statistics and Paired Sample T-test.

IV. RESULTS

A. BEFORE TRAINING

A.1 KNOWLEDGE LEVEL

The knowledge level of the respondents about the maintenance of dental and oral health before being given training is shown in table 1. Table 1 shows the knowledge of respondents at most was in the criteria of intermediate as many as 23 (57.5%) and the least is on the good knowledge criteria in as much as 7 (17.5 %) with an average value of 4.3.
Table 1. Frequency distribution of respondents’ knowledge level

<table>
<thead>
<tr>
<th>No.</th>
<th>Criteria</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Good ( &gt; 5.50 )</td>
<td>7</td>
<td>17.50</td>
</tr>
<tr>
<td>2</td>
<td>Intermediate (3.10 - 5.50)</td>
<td>23</td>
<td>57.50</td>
</tr>
<tr>
<td>3</td>
<td>Bad (&lt; 3.10 )</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

A.2 TOOTH BRUSHING ABILITY
The results of observation on the brushing ability of respondents before being given training, found that there were no respondents brushing their teeth properly.

A.3 DENTAL AND ORAL HYGIENE LEVEL
The examination results of dental and oral hygiene before the training of tooth brushing can be seen in Figure 1.

Figure 1 shows that the highest level of dental and oral hygiene of respondents was intermediate in 28 persons and the least number was in the criteria of good was in as many as four persons while the OHI-S average value was 2.48.

B. AFTER 11 DAYS OF TRAINING

B.1 KNOWLEDGE OF RESPONDENTS AFTER TRAINING
The level of knowledge of the respondents in maintaining dental and oral health after 11 days of training was shown in Table 2. Table 2 shows the knowledge of respondents at most was in the criteria of intermediate as many as 23 (57.5%) and the least was seven students in a criteria of good knowledge (17.5%), and has the average value of 5.02.

Table 2. Frequency distribution of respondents’ knowledge level after 11 days of training (Post-Test 1)

<table>
<thead>
<tr>
<th>No.</th>
<th>Criteria</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Good ( &gt; 6.74 )</td>
<td>7</td>
<td>17.50</td>
</tr>
<tr>
<td>2</td>
<td>Intermediate (3.33 - 6.74)</td>
<td>23</td>
<td>57.50</td>
</tr>
<tr>
<td>3</td>
<td>Bad (&lt; 3.33 )</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>
B.2 TOOTH BRUSHING ABILITY
The results of the observation of the brushing ability of the respondents after training for 11 day obtained the respondents brushing their teeth properly totalling seven students (17.50%), and the wrong ones were 33 students (82.50%).

B.3 DENTAL AND ORAL HYGIENE LEVEL
The results of the dental and oral hygiene examinations on the eleventh day after training of tooth brushing can be seen in Figure 2. Figure 2 shows that the level of dental and oral hygiene of the respondents is mostly in the criteria of intermediate as many as 28 students and the least was in good criteria as many as four students. The average OHI-S value was 1.62.

![Dental and Oral Hygiene Level](image)

Figure 2. Respondents’ oral and dental hygiene on day 11 (Post-Test 1)

C. AFT ER 21 DAYS OF TRAINING

C.1 KNOWLEDGE OF RESPONDENTS AFTER TRAINING
The level of knowledge of the respondents about maintaining dental and oral health after 21 days of training was shown in table 3. Table 3 shows the knowledge of respondents at most was in the criteria of good as many as 30 (75%) and no respondents who had bad knowledge. The average value was 8.82.

<table>
<thead>
<tr>
<th>No.</th>
<th>Criteria</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Good</td>
<td>20</td>
<td>50</td>
</tr>
<tr>
<td>2.</td>
<td>Intermediate</td>
<td>16</td>
<td>40</td>
</tr>
<tr>
<td>3.</td>
<td>Bad</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

C.2 BRUSHING ABILITY
The results of observation on the brushing ability of respondents after 21 days of training obtained 34 respondents were brushed teeth properly and only six brushed their teeth improperly.
C.3 DENTAL AND ORAL HYGIENE LEVEL

The results of dental and oral hygiene examinations after 21 days of training in tooth brushing can be seen in Figure 3. Figure 3 shows that the level of dental and oral hygiene of the respondents was mostly in good criteria, namely 32 students and no respondents had bad dental and oral hygiene criteria. The OHI-S average value was 1.17.

D. ANALYSIS RESULTS

Analysis results of differences in the level of knowledge, ability and dental and oral hygiene before and after training, with the Paired Samples test analysis can be seen in table 4. Table 4 shows that the value of p = 0.002.

V. DISCUSSIONS

The results of the study of 40 respondents obtained characteristics based on class and gender. Based on the class, the total number of students from class I to class VI is 40 persons. The number of students in class III at most as many as nine persons and the least class IV was as many as three persons. Based on the sex of the respondent, male sex was as many as 24 persons (60%), and women as many as 16 persons (40%). The results of the research on the level of knowledge, tooth brushing ability and grades of dental and oral hygiene before and after counselling and training with audio-visual media and descriptive edutainment methods can be explained as follows. The average knowledge of students of SDN 2 Rijasa, Penebel, Tabanan before training with audio-visual media and edutainment methods was as much as 4.30. The average value of knowledge after 11 days was 5.02 and after 21 days the average value of knowledge was 8.82. These results indicate an increase in respondents' knowledge about maintaining dental and oral health. The occurrence of this increase was due to the teaching of concepts that were conveyed interestingly through film shows and the participants were invited to sing about maintaining dental health. Besides that, it was also repeated repeatedly after the pre-test was carried out with audio-visual media and edutainment methods. The process was also carried out after post-test 1 and post-test 2. This is in accordance with Ashyar's opinion, that the involvement of targets in the education process is an effort to improve the target understanding of the material presented [2]. In this case, it is often used a theoretical basis of "Dale's Cone of Experience" or cone of experience from Edgar Dale. The basis for
developing the cone is not the level of difficulty, but the number of senses involved in the educational process. Counselling with the edutainment method is able to provide the opportunity for the target to be more involved in the learning process. According to Fadilllah, the education process with edutainment will be able to arise a reason, so as to enable an increase in knowledge and leap of learning achievements that have never been predicted beforehand [8]. The frequency of students at SDN 2 Rijasa, Penebel, Tabanan who were able to brush their teeth properly before and after training with audio visual media and edutainment methods was no respondent brushed teeth properly before training. Observation after 11 days of training included seven respondents (17.50%) who brushed their teeth properly and on the 21st day there were 34 respondents (85%) who brushed their teeth properly, only six persons (15%) who had not brushed their teeth correctly. The increase in the number of respondents brushing teeth properly from before and after the training was caused due to the training process that was followed by the respondents with a sense of pleasure because of the motivation from their own selves. This motivation arises as a result of the experience gained through film shows that if we don’t brush our teeth, it will cause cavities, even swelling on the cheeks, and bad breath that will be shunned by friends. This result is in accordance with the opinion of Herijulianti, who stated that health education is an opportunity planned for everyone to be able to learn about health problems, and make changes voluntarily through their behaviour. Health education programs involve providing information, exploring values and attitudes, making decisions, and practicing skills that enable behavioural changes [6]. According to Notoatmodjo, behaviour change can be caused by individual needs. It was also stated that one of the factors that influence a person's behaviour can be internal factors, internal factors that can influence a person's behaviour include knowledge, attitudes, perceptions, and motivation. Edutainment that is carried out when counselling will be able to generate these internal factors [5]. According to Fadilllah, edutainment is a learning process designed by combining the content of education with entertainment in harmony, so that learning activities take place pleasantly. In this case, it can be said that the learning process with this method prioritizes feelings of happiness in achieving learning goals, because learning has formed interest and motivation [8]. However, there were still six persons who had not brushed their teeth properly, this may be caused by age because the respondents are in the first class. The inaccuracy of the tooth brushing movement mainly occurs on the sides of the teeth facing the tongue and ceiling. The average level of dental and oral hygiene of SDN 2 Rijasa, Penebel, Tabanan students before and after dental and oral hygiene maintenance training with audio visual media and edutainment methods in 2015 was that before the training was conducted the average level of dental and oral hygiene was in the intermediate criteria which is indicated by the OHI-S average value (Oral Hygiene Index Simplified) in 2.48. The results of dental and oral hygiene examinations on the 11th day showed the average OHI-S in 1.62 and on the 21st day the OHI-S average value is 1.17. The decreasing value of OHI-S shows an increase in dental and oral hygiene. The level of dental and oral hygiene is affected by the presence of debris (food debris) that attaches to the surface of the tooth. Another factor that affects dental and oral hygiene is tartar. The tartar cannot be cleaned by brushing teeth. But brushing your teeth properly will be able to clean debris from the surface of the tooth. So, the factor that causes the decrease of OHI-S number is due to an increase in respondents' ability of brushing teeth. The ability improvement was caused by counselling and training of brushing teeth, and respondents easily practiced brushing their teeth because they had seen through audio-visual media and edutainment methods. This is in accordance with Anom's opinion, so that counselling and dental health care training are useful and easy to remember, so that they can be assisted with the right media and methods. For example, through the listening and physical media in which we listen and see the correct poster of steps to brush the teeth. Through posters and media, students can easily imitate the steps that must be taken so that the brushing of the teeth can be beneficial. In addition, the appearance of posters and shows of real images of not diligently brushing your teeth will be able to provide motivation for children to carry out maintenance of dental health. So, counselling and training on how to brush teeth properly for elementary school students who are most likely lazy to brush their teeth can change their habit to become more diligent in brushing their teeth.

The results of statistical tests show that there are differences in the level of knowledge and ability in maintaining dental and oral health before and after counselling and training with audio visual media and edutainment methods conducted in 2015. The analysis was carried out with the Paired Sample test that shows the value of \( p = 0.002 \) smaller than 0.005. The intervention with edu-entertainment was an effort to provide direct experience to the target, so that they are willing and able to change attitudes. According to Notoatmodjo, increasing knowledge on someone can change or strengthen their attitude towards a matter [5]. This is in accordance with Fadillah's opinion, which states that to facilitate understanding of material in counselling it is necessary to create fun and excitement, and with that atmosphere, it can create positive attitudes for learning goal. This can be caused by edu-entertainment can be interpreted as the rise-up
interest in the occurrence of full involvement [8][16]. It is suggested that dental health extension especially the way of tooth brushing should be maintained and improved especially in promotive and preventive way to change the behaviour of the people who are vulnerable to dental diseases [17][18]. Oral and dental disease is a public health problem today, especially periodontal tissue disease and carious teeth. Periodontitis can cause damage to the periodontal ligament and recession thus it must be maintained [19].

VI. CONCLUSION

The level knowledge of respondents before the training at most was in the criteria of intermediate as many as 23 (57.5%) with an average value of 4.3. After the training, the result at most changed into the criteria of good as many as 30 (75%) and no respondents who had bad knowledge. The average value was 8.82. In terms of brushing teeth, before the training, it found that there were no respondents brushing their teeth properly and after the training 21 days, it obtained 34 respondents were brushed teeth properly and only six brushed their teeth improperly. While in the level of dental and oral hygiene shows that the highest level of dental and oral hygiene of respondents was intermediate in 28 persons and the least number was in the criteria of good was in as much as four persons. The OHI-S average value was 2.48. After the training, the level of dental and oral hygiene of the respondents is mostly in good criteria, namely 32 students and no respondents had bad dental and oral hygiene criteria. The OHI-S average value was 1.17. Generally, in the analysis result, the mean was in -7.25000 with deviation standard of 13.58497 and the P value (Sig) was in .002.

VII. THANKS

We are grateful to our partners:
- Badan PPDS Kesehatan
- Health Polytechnic of Health Ministry Denpasar
- Dental Hygiene Department of Health Polytechnic of Health Ministry Denpasar
- SDN RijasaTegalLinggaPenebelTabanan, Province of Bali

REFERENCES


AUTHOR'S BIOGRAPHY

I Made Budi Artawa, S.Si.T, SE, M.Kes, was born in Jembrana July 14, 1968. He lives at GerahaDewata, Jln. Blojaya II Blok A 15 Pemogan, South Denpasar. His last education was Master in Dental Health Services. Now he is a lecturer in the Department of Dental Health, Health Polytechnic of Health Ministry Denpasar. Jl. P.Moyo 33 Pedungan, Courses taught by him are Oral and Dental Health Services and the community, Entrepreneurship. As he has interest in dental health, some researches were done such as Analysis of Factors Affecting Consumer

Copyright to IJARSET www.ijarset.com 10090
Demand for Preventive Dental Health Services in Bangli District Health Center, Relationship of Reference Groups with the Consumer's Request for Preventive Dental Health Services at the BPG Puskesmas in Bangli district. In addition, the other researches are Analysis of Factors Associated with Gingivitis of Tiak Drinkers in Satra Village, Differences in The Occurrence of Tartar in Society with Well Water and without Well Water, besides also The Effectiveness of Counselling and Training Using Audio-Visual And Edutainment Media to Increase The Knowledge and Skills in Maintaining Dental and Oral Health in SDN RijasaPenebelTabanan 2. Lastly, the research was done by the author was Effectiveness of Motivation by Class Teachers on Dental and Oral Hygiene Class III SDN Bangli Regency 2018.

I Gede Surya Kencana, S.Si.T., M.Kes. was born in Tabanan, May 28, 1965. He lives at Jalan Diponegoro gang 8 No.17 South Denpasar. He works at the Health Polytechnic of Health Ministry Denpasar in Dental Health department. Courses are taught by him are Dental Morphology, Preventive Dentistry, Health Sociology, Family Dental and Oral Care Services, Use and Maintenance of Dentistry Tools. He successfully accomplished some researches within the title Channing The Behaviour in Tooth Brushing in Students of the Sixth Grade of SDN 6 Mas, District of Ubud, Gianyar Regency, Relationship between Parents' Knowledge Levels and Malocclusion Severity Due to Bad Habits in Students of St. Joseph 1 Primary School in Denpasar. Besides, the research was also Relationship Between Gingivitis and Smoking Behaviour in Wooden Sculpture Artists in Mas Village, Ubud District, Gianyar Regency, Effectiveness of Counselling and Training Using Audio Visual and Edutainment Media on Increasing Knowledge and Skills in Maintenance of Dental and Oral Health (Study conducted at RijasaPenebelTabanan 2 Elementary School in 2016). In addition, he had also already done Optimization of School Dental Health Unit (UKGS) to Increase the Degree of Dental Health of Students at UBUD KerthaBudaya Subdistrict, Interaction of Aloe Vera Leaf Extract (Aloe Vera L) and Betel Leaves (Piper Betle L) Against In Vitro Inhibitory Streptococcus Mutants Causes of Dental Plaque. Lastly, Effect of Cartoon Dental Health Education Animation Media on Oral Hygiene in Children with Impotence in Bangli State SLB.

I Nyoman Gejir, S.Si.T, M.Kes. was born in Gianyar December 31, 1968. He lives at Br. Batanancak, Mas Village, Ubud District, Gianzar Regency. He works at Health Polytechnic of Health Ministry Denpasar especially in department of Dental Health. He teaches Communication Media, Dental Health Promotion, Community Dental and Oral Health Care, and Therapeutic Communication. The researches that had been done were Optimization of UKGS to Improve the Degree of Dental Health and for Kertha Mas Middle School Students, District of Ubud and Evaluation of Foreign Tourist Satisfaction Levels on the Quality of Dental and Oral Health Services at Clinics and Hospitals in Bali.

Ni Ketut Nuratni, S.ST., M.Kes., was born in Denpasar on September 1, 1972. She lives at Jalan PulauSaelsusNomor 42 Denpasar Selatan, Bali. Her last education was Master in Epidemiology, Applied Science Concentration on Dental Nursing in Diponegoro University, Semarang. She is an instructor at the Department of Dental Nursing, Health Polytechnic of Health Ministry Denpasar, Jalan Moyo Island Number 33, Pedungan Selatan Denpasar. She teaches Basic Concepts of Dental and Oral Nursing, and Implementation of Inpatient Dental and Oral Health Care. She successfully accomplished some researches as follows, The Influence of Empowerment of School Health Business Teachers in Dental Nursing Care on Increasing Oral Hygiene in Primary Schools: Study in Four Primary Schools in South Denpasar Health Center I Work Area, Factors Causing Caries Towards Mother Visitors in PosyanduMelati 1 in SendangMulyo Village, Ngawen District, Blora Regency as well as Effect of Chewing Guava Fruit on Changes in Debris Index in Class I II and IV Students of MI Baiturahman Surabaya in 2014.

Ni Made Sirat, S.Si.T, M. Kes. was born in Gianyar, May 3, 1968. She lives at TukadUehBiu GangBumiNyiur No. 24 Denpasar. Her last education was Master in Public Health. She is a lecturer in the Department of Dental Health, Health Polytechnic of Health Ministry Denpasar in Jln. P. Moyo No. 33 Pedungan Denpasar. In Health Polytechnic of Health Ministry Denpasar, she teaches Preventive Dentistry, Professional Ethics and Health Law and Basic
Human Needs. The researches that had been done were Relationship of The Cariogenic Snack Pattern with Dental Caries in Students Elementary School in The Working Area of South Denpasar Health Center III Year 2016 and Effectiveness of Little Dentist Training to Improve Dental and Oral Hygiene of Students in SDN 1 Kerobokan Badung Regency in 2017.