

Tooth Brushing Big Book as Health Promotion Media in Improving Knowledge and Practice to Brush Teeth on 2th Grade Elementary School

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Abstract—Tooth cavities is one of health problem which is often to be experienced by school children and its prevention can be done by brushing tooth. This research is research on health education using health promotion media with aim to improve knowledge and practice along with tooth brush on student. Media which will be used in this research is Tooth Brushing Big Book as dental promotion media for Elementary School Students which is designed by researcher self. Big Book is one of media which are many used in education sector as effective learning media that can reach entire student because its strength of its shape and function, as the result it can improve student learning result. Therefore, that media wanted to be applied in school health promotion. Quasi experimental research with Nonequivalent Control Group Pretest-Posttest Design will be done toward 54 Elementary School students (27 students on experimental group / who are given media, 27 students on control group / who are not given media). Research will be done on two classes in State Elementary School 014 Sungai Pinang Samarinda which are class II A and II B. Knowledge and attitude are measured by questionnaire which are tested its validity and reliability, whereas practice is observed directly through observation sheet. Data analysis used Paired T-Test and Independent T-Test.

Keywords— Tooth Brushing, Big Book, Health Promotion

I. INTRODUCTION

Oral and dental health is often not be a priority for some people, while the teeth and mouth are the 'gate' of the entry of bacterial germs so that it can interfere with the health of other organs. Habit of brushing teeth is important thing, according to time data of brushing teeth shows that maintain behavior from Indonesia society in oral health is still very low. It is indicated by data that 93,8% of Indonesians already brush teeth, but only 2,3% who behaves correctly in brushing teeth [1]. Dental caries continues to be an important public health problem throughout the world. The World Health Organization (WHO) emphasizes that diseases affect around 60-90% of school children [2].

According to Basic Health Research in 2013, national prevalence of dental and oral problems was 25.9% with national prevalence of active caries of 53.2% and national DMF-T index of 4.6. East Kalimantan area has an active caries prevalence of 63.3%, with DMF-T index value of 4.7. The data show that active caries prevalence and national DMF-T index in East Kalimantan is higher than that of national average [3]. Research result at SD Gmim and Elementary School Inpres on sub-district of Kawangkoan Bawah can be concluded that total of first permanent molars caries of 8-10 years old children was 67.70%. The causes of dental caries are lack of attention, knowledge,

awareness of parents and children about hygiene and dental and oral health [4].

Skills of brushing teeth must be taught and emphasized in children of all ages especially for students, because at that age it is easy to accept and instill basic values. Health education is one of the important effort to support health, especially in children who have less oral hygiene and skills in brushing teeth is less, it is expected to change behavior that causes loss to health norms that are appropriate for health [5].

Teeth brushing behavior, oral hygiene and diet have a significant effect on dental caries. So it is recommended that health institutions are expected to improve counseling through the role of UKGS as an effort to improve dental and oral health status in elementary school children [6].

Use of learning media at the learning orientation stage will be very helpful effectiveness of learning process and message delivery along with contents of the lesson at that time [7]. One of media which can be used is Big Book; it is media picture story that suitable for learning activities in the classroom. This picture story book with a large size and the contents are adapted to learning needs of children [8].

Learning by using Big Book media provides opportunities for students to engage in fun language learning activities, allowing students to see the same writing when the teacher reads the writing in the Big Book, allowing students to jointly give meaning to each writing in the Big Book, helps students to understand the relationship between spoken and written language, and can be interspersed with relevant conversations about the contents of the story in the Big Book together so that an interactive learning process occurs [9]. Big Book has been widely used in the field of education for effective language learning, so for the advantages of Big Book, researchers want to add health promotion activities to brush their teeth using Big Book media. This is because there have not been many studies that prove the use of Big Book in the field of public health.

Data Recapitulation of the Results of Primary School Health Screening in the work area of 24 Puskesmas Samarinda City in 2017 shows that one of working area of Puskesmas with the most dental caries is a Temindung Puskesmas which are 788 students [10]. Meanwhile, on Data Recapitulation result of Elementary School Health Screening in the work area of Temindung Puskesmas in 2017, from 13 Elementary School which were screened, Elementary School 014 Sungai Pinang have the highest total of dental caries that are 49 of 50 students who are netted, or 98% of students have dental caries [11].

Therefore, the researcher will do research at Elementary School 014 Sungai Pinang Samarinda. The purpose of this research to know the provision media to Tooth Brushing Big Books to increase the knowledge and practice of brushing teeth on II grade students at Elementary School 014 Sungai Pinang Samarinda.

Health Promotion

Health promotion is an effort to improve the ability of the community through self-learning by and for the community so that they can help themselves, and develops community-based activities in accordance with local social culture and supported by health-oriented public policies [12]. Health promotion is also an educational process that cannot be separated from the learning process. In the learning process, there is a reciprocal influence between various factors, including the subject of learning, teaching or facilitating learning, the methods used and the material or material learned. While the output is the result of learning itself, which consists of new abilities or new changes in the subject of learning [13]

Health Promotion at School

Schools occupy a strategic position in health promotion efforts, because: a) the majority of children aged 5-19 are exposed to educational institutions for a considerable period of time (kindergarten to high school); b) schools support the growth and natural development of a child, because in school a child can learn various knowledge, including health, as a provision for their future life. Health promotion in schools helps improve the health of students, teachers and employees, parents and communities around the school environment, so that the teaching and learning process takes place more productively. Health promotion in schools is an effort to create schools to become communities that are able to improve their health status through: a) create a healthy school environment; b) maintenance and health services at school; and c) sustainable health education efforts [14].

Props or Media in Health Promotion

Props or media will greatly help efforts to deliver health messages in health promotion so that they can be received clearly and precisely. Educational aids are tools used by educators in delivering teaching materials [13].

In general, educational media is useful to generate learning excitement, allowing more direct interaction between students with the environment and comprehension, allowing students to learn according to their abilities and interests. Learning media also has the ability to provide the same stimulants, equalizing experiences, giving rise to the same perception [4].

Big Book

Big Book is one of the media that is loved by children and can be made by the teacher. This large book is usually used for low-class children (grades 1-3). In it contains a short story with large writings given colorful images. Children can read by themselves or listen to the story from the teacher [15].

Some advantages of using Big Book are as follows:

- Providing equal opportunities for students to engage in enjoyable reading activities.
- Allows students to see the same writing when the teacher reads the writing in the Big Book.
- Allows students to jointly give meaning to each article in the Big Book.
- Helping students understand the relationship between spoken and written language.
- Can be interspersed with relevant conversations regarding the contents of the story in the Big Book together so that an interactive learning process occurs [9].

In Tooth Brushing Big Book media, the Big Book created by researcher self with several activities in it, such as the lift the flap page, sticking, matching pictures, and brushing teeth pages, so that when reading a Big Book can involve the active role of students. The purpose of making Tooth Brushing Big Book is to promote health, so that students understand the importance of properly and regularly doing toothbrushes in maintaining oral and dental health, and preventing diseases caused if they do not brush their teeth properly.

Behavioral Domain

Forming a human behavior involves three main domains of behavior, namely knowledge, attitude and practice. The purpose of an education is to develop or improve the three domains of behavior, so that for the sake of the measurement results of these three domains are measured [13]. Knowledge is the result of knowing, and this happens after people sensing a particular object. Sensing occurs through the five senses of man, namely the sense of sight, sense of hearing, smell, taste, and touch, while human practices are all activities or human activities, both those that can be observed directly or that cannot be observed from the outside [16].

Health education is one of the important efforts to support health, especially in children who have low oral hygiene levels and lack of tooth brushing skills, it is hoped that it can change behavior from detrimental to health to a norm that is suitable for health [5].

Dental Caries

Formation of dental caries occurs due to the interaction between the four factors, namely microorganisms (bacteria), tooth (host), food, and time. Caries is faster in children compared to adults [17].

Dental caries and other dental diseases can be prevented by increasing promote efforts on brushing behavior in the right way early through the following messages: (1) Brush your teeth after breakfast and before bedtime; (2) Use a downy toothbrush and fluoridated toothpaste; (3) Brush the entire tooth surface for 2 minutes, and rinse enough once; (4) Reduce sugary and sticky food (no more than 2 times between meals); (5) Eat fibrous fruits as a dessert [18].

Previous studies showed that the use of the Big Book has a significant impact on the ability to read a simple sentence on students with disabilities mild intellectual, based on these findings, it is expected that Big Book can be used as an alternative media in learning, especially in thematic subjects and other lessons to support the quality of learning [19]. Big Book mathematics textbook about fraction story gave differences in student learning outcomes to be better between before and after using textbook products [20]. Big

Book could improve learning outcome of English reading of student at SD Muhammadiyah 08 Dau Malang [21].

II. METHODS

This study used a quantitative approach; the type of study was a quasi-experimental design. The design used was Nonequivalent Control Group Design, in this design involves two groups, namely the experimental group and the control group. Both groups will be given a pretest, and then in the experimental group given the treatment of Tooth Brushing Big Book while the control group is not given treatment, then the two groups are given a posttest.

This research was carried out at Elementary School 014 Sungai Pinang located in Mugirejo Village, Sungai Pinang District, Samarinda City. The population in this study were all grade II elementary school students at Elementary School 014 Sungai Pinang in 2018-2019 Academic Year as many as 46 students divided into class II A and class II B with the same number of students namely 23 students, both classes will be taken as experimental subjects and control. The sample in the study was chosen by non-random sampling with total sampling technique, then the sample size used in each group was 23 students. The independent variable in the study is the Big Book media, while the dependent variable is the knowledge and practice of brushing teeth.

The instruments used in the pretest and posttest were questionnaires to measure the knowledge of tooth brushing, the validity and reliability of the questionnaire was tested in Elementary School 008 Sungai Pinang Samarinda and the results in the questionnaire were valid and reliable. The practice of

brushing teeth was measured using an observation sheet summarized from the Book of the Ministry of Health of the Republic of Indonesia in 2012 concerning Training Guidance for Dental and Oral Health Cadres in the Community. In addition, an assessment of the Big Book media made by researchers has been carried out, this assessment is carried out by experts in their fields through review expert, and the results are obtained that the media is suitable for use in student learning. Data were analyzed using paired t-test to determine differences before and after treatment, or using the Wilcoxon test as an alternative test. To find out the differences between the control and experimental groups, a t-independent test was used, or the Man-Whitney test as an alternative test, with an error rate of 5%.

III. RESULT AND DISCUSSION

Statistical results of differences in knowledge of brushing teeth before and after in the experimental and control groups are shown in table I:

TABLE I. PRETEST – POSTTEST IMPROVEMENT KNOWLEDGE

No	Groups	Knowledge	N	Mean	p value
1	Experiment	Pretest	23	47.43	0.000
		Posttest	23	82.60	
2	Control	Pretest	23	48.61	0.090
		Posttest	23	51.38	

According to table I, obtained a p value of 0.000 compared to $\alpha = 0.05$, p value $< \alpha$ so that it can be concluded that there is a significant difference between knowledge before and after the Tooth Brushing Big Book media given in the experimental group. On control group obtained p value of 0.090 compared to $\alpha = 0.05$, p value $> \alpha$ so that it can be concluded that there is no significant difference between knowledge before and after in the control group.

Based on the results of statistical tests using the Independent-Sample t-test, it can be seen the comparison of the average knowledge of the experimental group and the control groups are shown in table II:

TABLE II. THE AVERAGE DIFFERENCE OF KNOWLEDGE

No	Groups	N	Mean	p value
1	Experiment	23	82.60	0.000
2	Control	23	51.30	

According to table II, because p value $< \alpha$, it can be concluded that there is a significant knowledge difference between students who are given Tooth Brushing Big Book media and students who are not given the media.

Statistical results of differences in knowledge of brushing teeth before and after in the experimental and control groups are shown in table III:

TABLE III. PRETEST – POSTTEST IMPROVEMENT PRACTICE

No	Groups	Practice	N	Mean	p value
1	Experiment	Pretest	23	23.48	0.000
		Posttest	23	31.78	

2	Control	Pretest	23	23.48	0.934
		Posttest	23	23.43	

According to table III, obtained a p value of 0.000 compared to $\alpha = 0.05$, p value $< \alpha$ so that it can be concluded that there are significant differences between the results of student practice before and after the Tooth Brushing Big Book media given in the experimental group. On control group obtained p value of 0.934 compared with $\alpha = 0.05$, p value $> \alpha$ so that it can be concluded that there is no significant difference between the results of student practice before and after in the control group.

Based on the results of statistical tests using the Independent-Sample T Test, it can be seen the comparison of the average knowledge of the experimental group and the control groups are shown in table IV:

TABLE IV. THE AVERAGE DIFFERENCE OF KNOWLEDGE

No	Groups	N	Mean	p value
1	Experiment	23	31.78	0.000
2	Control	23	23.43	

According to table II, because p value $< \alpha$, it can be concluded that there is a significant practice difference between students who are given Tooth Brushing Big Book media and students who are not given the media.

The success of the teaching-learning process will be influenced by factors that support learning and teaching interactions, one of which is learning media; in this study is Tooth Brushing Big Book that is proven to help deliver material student learning knowledge and practice regarding brushing teeth.

The use of learning media at the learning orientation stage will greatly help the effectiveness of the learning process and the delivery of messages and content of the lesson at that time [7]. Through these results, it is known that Big Book helps the effectiveness of the health education process in delivering messages related to tooth brushing because Big Book represents artificial objects that provide a tooth brushing learning experience. Based on Edgar Dale's cone, simulations or models with direct experience will affect up to 90% or occupy a high intensity to perceive educational or teaching materials, while the delivery of materials with only words is very ineffective or of the lowest intensity [13].

IV. CONCLUSION

It can be concluded that Big Book affects toward the improvement of students tooth brushing knowledge and practice. It is suggested that Big Book media can be used as alternative learning media for health workers or for school to promote health related with tooth brushing toward students to deliver health promotion can be effective to hit the target according to its characteristic.

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