EXPLOSION TEETH BOX PROMOTION MEDIA MODEL AGAINST CHANGES IN TEETH BRUSHING BEHAVIOR IN SCHOOL STUDENTS

Melani Agis Marludia[1], Masrifan Djamil[2], Rasipin[3], Suharyo Hadisaputro[4], Bedjo Santoso[5]
[1,2,3,4,5]*Postgraduate Program Poltekkes Kemenkes Semarang, Indonesia*

Corresponding author: Melani Agis Marludia
Email: melanieagismarludia.mam@gmail.com

ABSTRACT

Dental and oral health problems in primary school students are in the high category, this is because efforts to improve dental health behavior of school children are still not optimal. One effective prevention of these problems through the act of brushing your teeth diligently, thoroughly and regularly. Proper dental health education is given to primary school students in the form of media that is packaged by learning while playing. Media promotion explosion teeth box is expected to change the behavior of brushing your child's teeth. Objective: To produce a suitable and effective explosion teeth box promotion media model towards changing tooth brushing behavior among primary school students. Methods: Research and Development (R&D) and product / model trials (quasy experimental control group pretest and posttest design studies). The subjects of class III primary school students were divided into 2 groups: explosion teeth box as an intervention group and flashcard media as a control group and the duration of treatment for 10 days. The results of the model design were validated by experts. Data were tested using the interclass correlation coefficient test, Shapiro-Wilk, Friedman, and Post-hoc Wilcoxon. Results: The average validation of explosion teeth box experts was 86.66 (very feasible) as a medium for the promotion of dental health in primary school students shown by the p-value (0.001). This model was effective in increasing the knowledge of brushing teeth (p = 0.001) and decreasing the index debris score (p = 0.001) compared to the control group.

Keyword: Primary School Students, Explosion Teeth Box, Changing Tooth Brushing

Introduction

Oral and dental health is a part of overall health because it cannot be separated from the health of the body in general. A dental and oral health problem that is widespread in most of the world's population is dental caries which has a significant negative impact on a person's quality of life[1,2].

The World Health Organization (WHO) in 2016 stated that the incidence of caries in children is quite high, namely 60-70%[3]. In addition, the American Academy of Pediatric Dentistry (AAPD) in 2013 stated the prevalence of dental caries in children under 12 years of age in these countries. developed such as Britain by 32% and America States of 28.9%[4]. This is not much different from the condition of dental caries in Indonesia, the results of Riskesdas, the incidence of dental caries increased quite significantly from 2013 in children aged 5- 9 years of 25.8% and in 2018 54.3%[5,6]. The results of research in Central Java by Anisah 2018 stated that the number of active dental caries was 41.3%[7].Effort government

intackling dental and oral health problems can involve integrated activities according to the World Health Organization (WHO) launched the "Global School Health Initiation" which was held to improve student health through school health programs. The activities carried out emphasize on development of healthy environments and individual health practices. In Indonesia, the government has made promotional and preventive programs through the Dental and Oral Health Efforts (UKGS) which are expected to improve oral health in elementary school students[8,9].

One form of approach to providing dental health education to elementary school students is through the media explosion teeth box which is packaged into an educational education that is carried out by learning while playing. This theory has been put forward since 1969 and is still used by many practitioners. The strategy for managing dental health in elementary school students using the explosion teeth box media is as a basis for raising awareness about oral health care in order to achieve an optimal degree of health.

Explosion teeth box has a goal to improve cognitive development and can dig up new information easily. The advantage of this media is that it has a game component that can be used as a place to introduce dental health concepts that are introduced to students so that it can be used as a creative and innovative media for knowledge.

Explosion teeth box in the form of a box, when the box is opened it will form a network of squares that bloom so that it looks attractive and brings up components in the form of writing, pictures and decorations according to the theme that has been modified in such a way.

Methods

Research and Devolopment (R&D) This study aims to develop a dental and oral health learning model for elementary school students. Research and Devolopment Method.

(R&D) is a research method used to produce products and test the effectiveness of these products. The Research and Development (R&D) procedure consists of 5 main steps, namely: 1) information gathering, 2) model design, 3) expert validation and revision, 4) model testing, and 5) model results.

The research design used was a quasy experiment. (pre and post-test with control group design). This research was conducted at

SDN 02 Pedalangan Semarang City as an intervention group and SDN 03 Semarang City as a control group. The sampling technique was purposive sampling with a total of 50 children divided into two groups, namely the intervention group with 25 children and the control group with 25 children.

The data for measuring the knowledge of brushing teeth and the debris index score were performed using statistical tests. The research data used a ratio scale so that the normality test used the Shapiro Wilk statistical test to analyze variable data in the paired group normal data using the Friedman test. For abnormal data, the paired group used the Wilcoxon test and the unpaired group used the Mann-Whitney test.

Results and Discussion
1. Information Gathering

The results of information collection carried out by the interview method and systematic literature review concluded that in order to establish the independence of elementary school students in increasing their knowledge of brushing their teeth, it is necessary to provide appropriate educational methods supported by various learning media that can attract attention so that students elementary schools are able to do it.

Variable	Group Intervention		P-Value	Group Control		P-Value
	Mean	SD		Mean	SD	
Knowledge						
Pre-test	7,12	0.92	0.004	4.84	0.94	0.002
Post-test 1	8,48	0.91	0.008	5.08	0.86	0.001
Post-test 2	8.68	0.74	0.002	5.16	1.06	0.001
Score *debris index*						
Pre-test	1.45	0.35	0.336	1.97	0.22	0.562
Post-test 1	0.94	0.41	0.61	1.92	0.27	0.415
Post-test 2	0.94	0.41	0.61	1.88	0.23	0.176

Shapiro-Wilk

This is in accordance with Musyaroh's research (2017), the provision of education to elementary school students must be appropriate and in accordance with aspects of its development

The learning model in increasing the knowledge of brushing teeth that is suitable for realizing this is the explosion teeth box. This is in accordance with Dewi SRP's research (2017), the media succeeded in developing knowledge of brushing teeth combined with games.

2. Expert Validation
Tabel 1. Expert Validation Results

	Validity Expert				
No.	Name	Score	Average Flat	Category	*P-Value*
1	Promotion experthealth	85.27			
2	Media expert	90.18	86.66	Very Well worth it	0,000
3	Child education specialist	84.55			

Interclass Correlation Coefficient

Table 1. Results of research from expert validators, it is known that the feasibility score is 86.66 which is categorized as very feasible. The result of expert validity shows that the p-value = 0.000, which means that the media explosion teeth box is relevant and feasible as a dental health education model for elementary school students.

3. Model Trial
Tabel 2. Data normality test of primary school students in the intervention group and the control group

The results of the data normality test for primary school students in the intervention and group showed that the p-value was> 0.05, so it could state that the data were not normally distributed, so it used a non-parametric test. The total score shows that the data is normally distributed, to use a parametric test.

Tabel 3. The paired data effectiveness test for the knowledge variable and the debris index score in the intervention group and the control group

Pair Test *					
Variable	Group	Mean ± SD Pre-test	Mean ± SD Post-test 1	Mean ± SD Post-test 2	*P-Value*
Knowledge	Intervention	7.12 ± 0.92	8.48 ± 0.91	9.44 ± 0.58	0,000
	Control	4.84 ± 0.94	5.08 ± 0.86	5.16 ± 1.06	0.084
Debris score	Intervention	1.45 ± 0.35	0.94 ± 0.41	0.55 ± 0.32	0,000
index	Control	1.97 ± 0.22	1.92 ± 0.27	1.90 ± 0.24	0.075

ᵏ Friedman

The results of the paired data effectiveness test of the knowledge variable that the p-value of the intervention group is p = 0.000 (<0.05), which means that the explosion teeth box is effective in increasing knowledge in elementary school students. The p-value of the control group is p = 0.084 (> 0.05) which means that the extension model using flash cards is not effective in increasing knowledge of elementary school students.

The results of the paired data effectiveness test of the debris index score variable showed that the p-value of the intervention group was p = 0.000 (<0.05), meaning that the explosion teeth box was effective in increasing the debris index score in elementary school students. The p-value of the control group is p = 0.075 (> 0.05).

Tabel 4. Paired post-hoc effectiveness test of knowledge variables and debris index scores in the intervention group and the control group

Variable	Test *Post Hoc* Pair **					
	Intervention Group		P-Value	Control Group		P-Value
	Mean	SD		Mean	Mean	SD	
Knowledge						
Pretest-posttest1	7,12	0.92	0,000	4.84	0.94	0.180
Posttest1-posttest2	8,48	0.91	0,000	5.08	0.86	0.564
Pretest-posttest2	9.44	0.58	0,000	5.16	1.06	0.097
Debris score *index*						
Pretest-posttest1	1.45	0.35	0,000	1.97	0.22	0.081
Posttest1-posttest2	0.94	0.41	0,000	1.92	0.27	0.605
Pretest-posttest2	0.55	0.32	0,000	1.90	0.24	0.058

**Wilcoxon Poct-Hoc

The results of the paired post-hoc test of the knowledge variable show that the value of knowledge in the pre-test-post-test 1 has increased significantly, as evidenced by the p-value of the intervention group of 0.000 (p <0.05) while in the control group the value of p-value 0.180 (p> 0.05). The knowledge value in the post test 1-post test 2 experienced a significant increase, as evidenced by the p-value of the intervention group 0.000 (p <0.05), while the control group did not experience a significant increase, it was proven that the p-value was 0.564 (p> 0.05).

The knowledge value in the pre-test-post-test 2 experienced a significant increase, as evidenced by the p-value of 0.000 in the intervention group (p <0.05), while the control group did not experience a significant increase, it was proven that the p-value was 0.097 (p> 0). ,05).

The results of the post-hoc data paired with the debris index score variable showed that the debris index score in the pre-test-posttest 1 had a significant increase, as evidenced by the p-value of the intervention group of 0.000 (p <0.05) while in the control group the p-value - value 0.081 (p> 0.05). Debris index score value on post test 1-post test 2 in the intervention group the p-value was 0.000 (p <0.05), while in the control group there was no significant increase, it was proven that the p-value was 0.605 (p> 0.05). The debris index score in the pre-test-post-test 2 experienced a significant increase, as evidenced by the p-value of the intervention group 0.000 (p <0.05), while the control group did not experience a significant increase, it was proven that the p-value was 0.058 (p> 0.05).

The results of the model, in the form of promotional media, explosion teeth box, are the output of the development of teaching methods and media for dental and oral health in elementary school students. experienced a significant increase, it is eviden.

Figure 1. Explosion Teeth Box

The results of information gathering concluded that in order to establish the independence of elementary school students in changing tooth brushing behavior, it is necessary to provide appropriate educational methods supported by various learning media that can attract the attention of elementary school students to be able to carry it out. The learning model in changing the behavior of brushing teeth that is suitable to make this happen is the explosion teeth box.

The design results of explosion teeth box design are box / cube-shaped media to facilitate students in the process of dental

and oral health education, especially in changing teeth brushing behavior. In developing this media, research refers to the development model of Borg and Gall in Yulianti (2014), namely: information gathering, model design, expert validation and revision, model / product testing and model / product results. In the learning process using the explosion teeth box media with 25 elementary school students, the researcher asked the students to form 5 groups each consisting of 5 students. Furthermore, the researcher distributed one explosion teeth box to each group. During the learning process, the students looked enthusiastic and happy to take part in learning activities, which could be seen from the better student attention.

The results of expert validation show that the p-value = 0.000, which means that the explosion teeth box is relevant as a model of dental health education for elementary school students. The expert validation process is important in development products / models in order to produce products / models that are useful in improving the quality of education.15 This is in accordance with Sharma's research (2016), good media will support the learning process for the practice of brushing teeth.

The results of the explosion teeth box promotion media are in accordance with the cognitive theory according to Jerome Bruner, which states that individual cognitive development occurs through three stages that are determined by the way he sees the environment. This stage includes enactive, iconic, and symbolic. Students learn using concrete objects, there are pictures and symbols of thematic material. Learning is student centered and provides hands-on experience. In addition, the media is in accordance with the interests, needs and characteristics of elementary school students17.

The media is effectively used as a tool for the learning process that is loaded in such a way that educational content and games can be combined harmoniously and attract primary school student responses. This is in accordance with the research of ER Sipnaturi (2020), the learning process is a state, strategy and main element that affects the right atmosphere for learning by using a good presentation style or method.

Conclusion

Based on the results of the study, it can be concluded that the explosion teeth box is proven to be more effective in increasing changes in brushing behavior in elementary school students.

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