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Research Article

Development of educational model of the pillow book kesgi as learning to brushing teeth for preschool children

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Abstract

Preschool children have higher health problems than elementary school age children. The high level of dental health problems in preschool children is due to the low behavior of maintaining oral hygiene, especially in brushing teeth, it is proven that the data on brushing teeth correctly at the age of > 3 years is only 2.3%. Efforts to improve dental health status in preschool children by establishing independence in brushing teeth as early as possible. The kesgi pillow book model is a development of the dental health pillow book media that researchers have made in previous studies, where there are various pillow book titles, so it is necessary to develop learning methods for the dental health pillow book media that have been created. This study aims to develop an educational model of the Kesgi pillow book as an effort to improve the dental and oral health status of preschool children. This research method uses Research and Development (R&D). The samples for the design stage of the Kesgi pillow book model with purposive sampling consisted of: dental health managers at the health office, curriculum managers at the education office, heads of community health centers, kindergarten principals, dental health workers and teachers. The research instrument used a question sheet and data collection techniques were carried out by interview. Data analysis for model validation with intraclass correlation coefficient. The results of expert validity show that the p-value = 0.000. Conclusion: educational model of the pillow book kesgi relevant as a learning model for preschool children in an effort to improve the dental health status of preschool children.

Keywords: Model, pillow book, learning, brushing teeth

INTRODUCTION

The easiest way to maintain oral and dental health is brushing your teeth, so education on how to brush your teeth is needed since preschool-aged children. This age is a golden period to be given treatment in the form of habit cultivation (Najiah, et al, 2020). However, in Indonesian society, the behavior of brushing teeth correctly is only 2.8%. To overcome the low rate of tooth brushing behavior, it is necessary to provide education that attracts children's attention, such as providing education with games because through this method children can become more concentrated on teaching, easy to understand by children, making children easy to remember, making children easier to remember. Believe in education because children actively participate in simulations and direct practice in the teaching process. In addition, it can also stimulate children's abilities which are associated with the ability to brush their teeth.¹⁻⁴

Schools are ideal places to develop health education, including dental health education. In Indonesia, the school dental health program is the UKGS program, which is a school dental health program under the guidance of the public health center or can collaborate with various related agencies. In general, the target of dental health programs in schools is elementary school children, so that dental health programs for preschool children do not get serious attention and are less than optimal.⁵⁻⁷

Seeing this, it is still very important to carry out various innovations and breakthroughs to prevent dental caries, one of which is by innovative dental health education models that can make schools independent in preventing dental disease. This is in accordance with a government program that recommends the implementation of brushing teeth every day at school for preschool children.^{8,9}

The kesgi pillow book model is a learning model for brushing teeth with pillow book media which is a modification of picture books and is used with game, simulation and practice methods. Pillow books are made of cloth that contain pictures that aim to improve children's creativity and reading skills. The benefits of a dental health pillow book given to early childhood are that it can stimulate children's curiosity by entertaining, encouraging motor skills and children's skills. The materials for the dental health pillow book used in this model are; maintenance of dental health and brushing teeth properly.¹⁰

The kesgi pillow book model was designed by researchers to improve the knowledge and skills of brushing teeth in preschool children. One of the Kesgi pillow book media is a printed teaching material that is designed to be studied independently by children so that it can increase children's knowledge in maintaining dental health. Demonstration methods and facilitated brushing practices using dental phantoms and toothbrush storage devices.

MATERIALS AND METHODS

The research method used is Research and Development (R & D). This study aims to develop a learning model for dental and oral health in preschool children. This is in line with the opinion of Sugiyono which states that the R&D method is a research method used to produce certain products, and to test the effectiveness of these products.¹¹ Research and Development (R&D) is a mix-method research. Mix-method research is a method that combines qualitative and quantitative approaches. In producing the product, the researcher collects data using a descriptive method, while in testing the effectiveness of the product using an analytical method. The research and development procedure includes 5 main steps, as follows: 1) information collection, 2) product/model design, 3) expert validation and revision, 4) product/model testing, and 5) product/model results.

The sample in the design of the Kesgi pillow book model with purposive sampling, which consists of: dental health manager at the health office, curriculum manager at the

education office, head of public health center, principal of kindergarten schools, dental health workers and teachers. The research instrument used a question sheet and data collection techniques were carried out by interview. Data analysis for model validation with intraclass correlation coefficient.

RESULT

The research results are divided into five stages, namely: information collection, product/model design, expert validation and product/model results, while product/model testing will be carried out at a later stage. So that the development of the model in this study resulted in the design of the pillow book model of Kesgi as learning to brush teeth for preschool children.

A. Information Collection

The results of information collection carried out by the interview method obtained the following results:

Table 1. Description of respondents' answers to the question: what is the government's policy regarding dental and oral health programs for preschoolers?

Respondents	Answers
Health office	In my opinion "The UKGS policy is contained in the Decree of the Director General of Health Efforts Number: HK.02.04/II/963/2012 concerning the School Dental Health Program (UKGS)"
Education office	In my opinion "the education office does not have a special program in an effort to improve dental health care. Judging from the curriculum, there are teaching materials for self-development habituation, one of which teaches brushing teeth, but only in one semester. This means that children get self-development material in brushing their teeth only once in a semester"
Public health center	In my opinion, "the programs that exist only at the puskesmas are UKGS and UKGMD. For schools, UKGS is implemented at least once a year in each school, but it does not reach all schools of early childhood education (Kindergarten and Early Childhood Education). The activities carried out are in the form of screening for children who have just entered, counseling and referrals for those who need it"
Principal of kindergarten	In my opinion "the implementation of dental health programs in schools is carried out by the puskesmas in the form of dental health checks, dental health counseling and joint toothbrushing, but only once a year"
Dental Therapist	In my opinion, "Until now there has been no special innovation in providing dental health programs to preschool children, following the standardized national program, namely UKGS in the form of dental health checks for children, dental health education and shared toothbrushes and referrals. The implementation has not been optimal due to limited facilities and dental health personnel, so it is only carried out in some kindergarten schools once a year"
Teachers	In my opinion "the UKGS program carried out from the public health centre is in the form of dental check-ups, counseling and a joint toothbrushing program"

Based on table 1, it can be concluded that the government's policy regarding dental health programs refers to the Decree of the Director General of Health Efforts Number: HK.02.04/II/963/2012 concerning School Dental Health Program (UKGS). The implementation is carried out at least once a year, in the form of dental check-ups, dental health counseling, joint toothbrushing and providing referrals.

Table 2. Description of respondents' answers to the question: what are the efforts to provide dental and oral health education to preschool children?

Respondents	Answers
Health office	In my opinion, "brushing teeth is one of the efforts in maintaining dental health, so it should be taught to children from an early age about the importance of brushing teeth. It's better to implement a toothbrush program every day at school if the facilities are adequate"
Education office	In my opinion, "at least for preschool children self-development learning activities are brushing teeth at school which is carried out consistently"
Public health center	In my opinion, "an effective effort is to teach children how to brush their teeth properly, because teaching children cannot be done all at once, so it takes several stages. At least children can brush their own teeth"
Principal of kindergarten	In my opinion "through learning activities brushing teeth in schools that are guided by teachers or dental health workers"
Dental Therapist	In my opinion "generally this is done through dental health education and the practice of brushing teeth in preschool children"
Teachers	In my opinion "teaching children about brushing their teeth from an early age, because brushing teeth is the easiest way to avoid preventing dental caries"

Based on table 2, it can be concluded that the dental and oral health education efforts for preschool children by providing education and practice of brushing teeth every day.

Table 3. Description of respondents' answers to the question: what method is suitable for improving the ability to brush teeth in preschool children?

Respondents	Answers
Health office	In my opinion "the game method is suitable for children, this is in accordance with the child's development, or in other words learning to brush teeth with playing sauce"
Education office	In my opinion, "the learning process in children must be able to attract children's attention, because if the child is interested then the child's response is faster and the learning process can give maximum results. For example, playing with, for example, stringing together the stages of brushing your teeth or with a demonstration of brushing your teeth"
Public health center	In my opinion "the learning process in preschoolers should be fun, for example the game method and the most important thing is the direct practice of brushing teeth"
Principal of kindergarten	In my opinion "learning to brush teeth for preschoolers is easier with demonstrations and practice of brushing teeth"
Dental Therapist	In my opinion, "teaching methods are interesting and fun, for example showing pictures of the stages of brushing their teeth or showing films/videos on how to brush their teeth, so that children can simulate and practice brushing their teeth"
Teachers	In my opinion, "the learning strategy that can be used is learning together. Teaching children about children's skills is easier than improving cognitive, because practice is preferred by children. The method that is suitable for children is simulation combined with games and direct practice of brushing teeth"

Based on table 3, it can be concluded that the learning process for brushing teeth that is suitable to be given to preschool children is learning in small groups by conducting simulations/demonstrations, the practice of brushing teeth is carried out consecutively and consistently.

Table 4. Description of respondents' answers to the question: what learning media is suitable for improving the ability to brush teeth in preschool children?

Respondents	Answers
Health office	In my opinion, "media for preschool children must be adapted to the characteristics of the child. For example, a picture book which explains the sequence of brushing teeth and has various colors, but is made from materials that are not easily damaged"
Education office	In my opinion "the choice of media must be really varied and must be interesting because children have a tendency to get bored quickly, of course it must also be adjusted to the method"
Public health center	In my opinion, "to teach brushing teeth, children must first have their own brush, paste and mouthwash that are stored in school, so an attractive toothbrush storage model is needed. For the media used demonstrations and practice using the phantom model"
Principal of kindergarten	In my opinion "the choice of media should really lead to something clear. Learning aids/media must highlight the material that will be the subject of discussion, for example color block media, story cards, puzzles, stamps, letters and numbers. In addition to media, a toothbrush and mouthwash is needed so that children can easily take and store their own brushing tools"
Dental Therapist	In my opinion "the learning media used must be interesting and fun, for example using power points to display pictures of the stages of brushing teeth, followed by the practice of brushing teeth using dental phantom media"
Teachers	In my opinion "tools/media used in preschool children's learning must pay attention to several criteria, such as: children have an interest in the material they are learning, are not easily damaged, are harmless and easy to use"

Based on table 4, it can be concluded that media that are suitable for preschool children are media that are varied, attract children's attention, and are easy to use, not easily damaged and have toothbrush facilities, so that with a combination of media, methods and facilities, children can more quickly in the process of brushing their teeth independently.

B. Product/Model Design

The data resulting from the collection of information is used to make product/model designs. The results of collecting information revealed that it was necessary to brush teeth independently for preschool children so that the dental health status in adulthood could be optimal. so the researchers made an educational model of the Kesgi pillow book that was adapted to the appropriate learning methods and media for preschool children.

This kesgi pillow book educational model has several stages, including the following:

1. Make a toothbrush storage

Toothbrush storage is intended so that every child has a personal sense of ownership of the toothbrush and toothpaste as well as his mouthwash, so that it is easier

for children to take and store toothbrushes without the help of others.

**Figure 1. Toothbrush storage**

2. Implementation of the kesgi pillow book model

- a. the first stage is made into small groups consisting of 5-6 people;
- b. in the second stage, children are given an explanation of the material from the dental health pillow book;
- c. the third stage, the child is led to do each activity from the first page to the end, if the child has difficulty playing the pillow book, then continuous assistance must be provided;
- d. the fourth stage, representatives of each group convey the material in front of the whole class according to the material that has been determined
- e. the fifth stage is doing a demonstration of brushing teeth
- f. the last stage of brushing teeth
- g. the implementation of this model is carried out for 5 consecutive days. It is intended that children have independence in brushing their teeth.

3. How to make kesgi pillow book media

- a. First, determine the concept first, what form will be made and then how many pages will be made. In making this kesgi pillow book, the theme is brushing teeth, generally the number of pages of the kesgi pillow book consists of eight pages
- b. Second, after determining the concept, then designing on a computer using Canva, power point, coreldraw, etc. applications according to ability. Usually the size used is 16 x 16 cm and one page background consists of 2 sheets of cloth
- c. Third, print on white cloth according to the design that has been made
- d. Fourth, do the filling of the foam, then do the sewing using a needle and sewing thread. You can sew the edges using a sewing machine to make it look neater.
- e. Fifth, after seeing the shape of the sheet, then unite the sheets into one book.



Figure 2. The design of the media pillow book brushing teeth



Figure 3. media pillow book brushing teeth

C. Expert Validation

There are 3 expert validators, the first is a dental health promotion expert, the second is a media expert and the third is an education development expert. This validation was carried out to obtain data that was used as a basis for testing the feasibility of the Kesgi pillow book educational model.

Table 5. Expert validation statistical test results

Validity Expert *			
	n	f (%)	p-value
Relevant	10	100	0,000
Irrelevant	0	0	

*intra class correlation coefficient

The results of expert validity show that the p-value = 0.000, which means that the pillow book education model is relevant as a learning model for brushing teeth in preschool children.

D. Product/Model Results

The product in the form of an educational model of the kesgi pillow book is the output of the development of learning models and dental health media for preschool children



Figure 4. Educational model of the kesgi pillow book as learning to brush teeth for preschool children

DISCUSION

The results of collecting information concluded that preschool children have higher dental health problems due to not being able to carry out tooth brushing activities independently, so that efforts are need to provide appropriate dental health education methods and supported by learning media that can attract children's attention. In accordance with Musyarofah's opinion, the provision of education/stimulation to early childhood must be appropriate and in accordance with the aspects of child development. The educational model of the kesgi pillow book is suitable to be used as a learning model for brushing teeth, so that the ability to brush teeth correctly can improve the status of dental hygiene. It is proven that the expert validity results show that the p-value = 0.000, which means that the pillow book education model is relevant as a learning model for brushing teeth in preschool children. Expert validation process is important in product/model development in order to produce useful products/models in improving the quality of education.^{12,13}

Pillow book media is a medium to convey dental health messages in the form of a pillow book containing text and images made using cloth. Its use can be with a game model. The game is an activity aimed at early childhood and is used for various children's interests, such as triggering children's motor, intelligence and cognitive abilities, so that the dental health

pillow book media can be liked by children. This kesgi pillow book media made with colorful and attractive colors will make dental health education fun and of course the material taught will be easily absorbed by children.^{7,14}

The advantages of the pillow book media as a promotion of dental and oral health include; the nature of the media is durable because it is made of cloth so that it is not easily dirty, wrinkled, or torn; easy to understand because real pictures of learning become fun because of the many colors, lots of activities, and provoke children's creativity to do the existing activities to be better and systematic; practical, because in one book there are various kinds of activities that support children's fine motor skills and are easy to carry everywhere.¹⁰

The hope of the Kesgi pillow book education model is an increase in tooth brushing skills in preschool children which can ultimately improve the dental health status of preschool children. In addition, it is hoped that in the future this Kesgi pillow book educational model can be used as a learning model for brushing teeth for preschool children by teachers and dental health workers.

CONCLUSION

Based on the results of the study, it can be concluded that the educational model of the pillow book kesgi relevant as a learning model for preschool children in an effort to improve the dental health status of preschool children.

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CONFLICT OF INTEREST

The author declared that don't have conflict of interest

ETHICAL CLEARANCE

This research has received ethical approval from the Research Ethics Committee, Health Polytechnic of Jakarta I No.028/KEPK/VII/2022.

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