

A healthy dental nutrition card as a parenting pattern to prevent stunting in toddlers

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Abstract

Background: The healthy teeth nutrition card (Kartu Nutrisi Gigi Sehat) is a development model for parenting patterns to prevent stunting in toddlers. These cards were developed for young children and are efficient for children and health practitioners to carry and play with. It is hoped that parenting patterns in the form of healthy dental nutrition can prevent caries which affect food intake and nutritional status. The aim of the research is to develop a healthy dental nutrition card as a parenting pattern to prevent stunting in toddlers.

Method: This research is Research and Development (R&D), carried out at Posyandu Widuri VI, Paal Lima Village, Jambi City. Media and material validation involved 6 experts. The research subjects were 16 toddlers, 4 cadres, 4 community health center staff, 2 PKK people, and 16 mothers of toddlers. The data collected using questionnaires.

Results: Healthy dental nutrition cards are very eligible for use to promote dental health as a parenting pattern to prevent stunting in toddlers.

Conclusion: It is recommended that future research test the effectiveness of healthy dental nutrition cards

Key words: The healthy teeth nutrition card, parenting

INTRODUCTION

The prevalence of caries in the 3-4 year age group is 81.5% and the 5-9 year age group is 92.6% and the 5 year age group according to WHO is 90.2%. In 2013, Indonesia was ranked first in the prevalence of stunting in the South-East Asia Region, namely 36.4% and in 2018 it was 30.8% in the 0-5 year age group nationally and in Jambi Province 30.2%. The prevalence of stunting over the last 10 years shows no significant changes and this shows that the problem of stunting needs to be addressed immediately (1,2).

Dental caries is one of the dental health problems that easily occurs in children. Dental health is important, especially for children's development. Dental caries causes children to experience loss of chewing power (impaired chewing function), affects appetite, nutritional intake and disruption of digestion and results in less than optimal growth, which ultimately will affect the child's nutritional status (3,4).

Stunting is a condition where children fail to thrive due to chronic malnutrition in the first 1,000 days of life. The growth of toddlers and children is disrupted due to inadequate food intake and the occurrence of recurrent infectious diseases, which results in reduced appetite and increased metabolic needs. The impact of shortness on children can reduce intelligence, increase morbidity and mortality, reduce productivity and can be inherited (intergenerational) in adulthood, pregnant women, and at every stage in the life cycle (2,5,6).

Parenting patterns (feeding practices) are one of the efforts to reduce stunting, targeting families and communities through various programs and activities (6). To increase family knowledge about nutrition, interesting and informative educational media is needed, so that delivering educational messages accompanied by message material or tools is expected to make it easier to remember the messages given. Information media can stimulate targets to carry out messages and help enforce knowledge that

has been received so that it will remain stored in memory longer (7,8).

The healthy teeth nutrition card is a development model for parenting patterns to prevent stunting in toddlers. This card measures 10cm x 8cm, consists of 20 cards containing pictures and explanations about caries, causal factors and 4 steps to prevent caries. These cards were developed with an early childhood theme and are efficient for children and health practitioners to carry and play with. It is hoped that parenting patterns in the form of healthy dental nutrition can prevent caries which can affect food intake and nutritional status.

METHOD

This research uses the Research and Development (R&D) method. This research was carried out at Posyandu Widuri VI, Paal Lima Village, Jambi City. The test subjects in the research were expert test subjects (material experts, media experts and language experts). Group trials were carried out on 16 toddlers at Posyandu Widuri VI, Paal Lima Village, Jambi City. Data collection techniques include expert assessments, cadres, parents and toddler responses, using questionnaires. Trials were carried out to collect the data needed as a reference to determine the appropriateness of the quality of the healthy dental nutrition card being developed. The trials carried out included expert validation tests and toddler group trials.

The data collection instrument used was a questionnaire. The questionnaire in this study uses a Likert scale which has categories ranging from the highest to the lowest. Researchers used several questionnaires, including questionnaires for material experts, media experts, language experts, cadre assessment questionnaires, parents and toddler response questionnaires.

Data obtained through product assessment sheets are analyzed quantitatively and qualitatively. Qualitative data was obtained from: 1) comments and suggestions obtained from material, media and language experts; 2) comments and suggestions from cadres and parents; 3) comments and suggestions from toddlers.

The data obtained was analyzed and described qualitatively to revise the product being developed. Quantitative data in this research and development is in the form of: 1) assessment scores from expert validation; 2) scores from product trials; 3) scores from usage trials. Toddler response questionnaire data was measured using the Guttman scale. Thus, if the results of expert assessments, product trials and usage trials are obtained, if the final result is at least "Good", then the healthy dental nutrition product being developed can be said to be suitable for use.

Then the collected data is analyzed by calculating the average score value in % which is obtained using the formula:

$$\text{Score} = \frac{\text{score value} \times 100 \%}{\text{Total score}}$$

The average score (%) obtained is converted into categories to see the suitability of the media. The feasibility components used are as follows:

Table 1
Eligibility Criteria for Health Education Media

Category	Range	Information
Very ineligible	< 21 %	Very ineligible (must be replaced or completely revised)
Ineligible	21-40%	Ineligible (must be replaced or completely revised)
Fairly eligible	41-60%	Fairly eligible with revisions
Eligible	61-80%	Eligible with revision
Very eligible	81-100%	Very eligible (without revisions)

Source: (9)

RESULTS

1. Development of Healthy Dental Nutrition Card Products

a. Empirical Problem Identification

According to Riskesdas in 2018, the main dental and oral health problem in Indonesia is the problem of tooth loss due to caries and this tends to increase, namely in 2018 it was 57.6% compared to 2013 (25.9%) and 2007 (23.4%). The prevalence of caries in the 3-4 year age group is 81.5% and the 5-9 year age group is 92.6% and the 5 year age group according to WHO is 90.2%. Dental caries causes children to experience loss of chewing power

(impaired chewing function), affects appetite, nutritional intake and disruption of digestion and results in less than optimal growth, which ultimately will affect the child's nutritional status.

- b. Literature study regarding basic assumptions and laws as well as basic principles of analysis of the development of healthy dental nutrition cards as a parenting pattern to prevent stunting in toddlers.

Parenting patterns (feeding practices) are one of the efforts to reduce stunting, targeting families and communities through various programs and activities (6). To increase family knowledge about nutrition, interesting and informative educational media is needed, so that delivering educational messages accompanied by message material or tools is expected to make it easier to remember the messages given. Information media can stimulate targets to carry out messages and help enforce knowledge that has been received so that it will remain stored in memory longer (7,8).

The healthy teeth nutrition card is a development model for parenting patterns to prevent stunting in toddlers. This card measures 10cm x 8cm, consists of 20 cards containing pictures and explanations about caries, causal factors and 4 steps to prevent caries. These cards were developed with an early childhood theme and are efficient for children and health practitioners to carry and play with. It is hoped that parenting patterns in the form of healthy dental nutrition can prevent caries which can affect food intake and nutritional status.

- c. Media Planning

Based on the results of problem identification and data collection through literature studies, media was obtained which is expected to help parents in parenting patterns to prevent stunting in toddlers. The findings were used to design and develop products in

the form of printed media, namely healthy dental nutrition cards.

- d. Development of Healthy Dental Nutrition Card Media





Figure 1. Healthy Dental Nutrition Card

2. The eligibility of a healthy dental nutrition card is based on validation from media and material experts

The eligibility of a healthy dental nutrition card based on the assessment of media and material experts was carried out based on validation from each of the three experts and the card underwent one revision. The results of media expert validation can be seen in table 2 and material expert validation in table 3.

Table 2
Results of Media Expert Validation of the Healthy Dental Nutrition Card

Indicators and Maximum Values	Validator Assessment							
	First				2 nd			
	1	2	3	Mean	1	2	3	Mean
Media quality (35)	28	28	28	28,0	32	33	32	32,3
Ease of use and image clarity (20)	16	16	16	16,0	17	17	19	17,7
Aspects of language use (15)	12	11	10	11,0	12	12	13	12,3
Total (70)	56	55	54	55,0	61	62	64	62,3
%	80	79	77	78,6	87	89	91	89,0
Eligibility Criteria	eligible with revision				very eligible without revision			

In table 1 it can be seen that the expert assessment or validation of the healthy teeth nutrition card media was carried out twice. In the first validation, the average total score from the 3 validators was 55.0 out of a maximum score of 70, with a percentage of the total score of 78.6%. The media eligibility criteria were appropriate with revision. Validators provide suggestions for improvements to media quality.

Based on these suggestions, the researchers made revisions, with the result that the total average score for the material assessment was 62.3.0 (maximum score 70), with a percentage of the total score of 89.0%, the media eligibility criteria were very eligible without revision. The material expert validator's assessment stated that the healthy teeth nutrition card media is very eligible for use to promote dental health as a parenting pattern to prevent stunting in toddlers. The results of material expert validation can be seen in Table 3.

Table 3
Results of Material Expert Validation of the Healthy Dental Nutrition Card

Indicators and Maximum Values	Validator Assessment							
	First				2 nd			
	1	2	3	Mean	1	2	3	Mean
Relevance (30)	24	24	24	24	26	27	25	26,0
Accuracy (20)	16	16	16	16	18	16	18	17,3
Serving equipment (5)	4	4	4	4	5	5	5	5
Basic concepts of matter (10)	7	7	8	7,3	9	9	8	8,7
Suitability of food with learning demands (15)	12	12	12	12	13	13	14	13,3
Total (80)	63	63	64	63,3	71	70	70	70,3
%	79	79	80	79,2	89	88	88	87,9
Eligibility Criteria	eligible with revision				very eligible without revision			

Based on table 2, it can be seen that expert validation of the healthy dental nutrition card material was carried out twice. The first validation obtained an average total score from 3 validators of 63.3 out of a maximum score of 80, with a percentage of the total score of 79.2%, the media eligibility criteria were eligible with revision. The validator provides suggestions for improvements to the basic concept of the material. Based on these suggestions, the researcher made revisions, with the result that the total

average score for the material assessment was 70.3 (maximum score 80), with a percentage of the total score of 87.9%, the media eligibility criteria were very eligible without revision. The material expert validator's assessment stated that the healthy teeth nutrition card media is very eligible for use to promote dental health as a parenting pattern to prevent stunting in toddlers.

(maximum score 65), with a percentage of the total score of 88.8% and the media eligibility criteria were very eligible. Meanwhile, the cadre response to the media was 57.7, with a percentage of the total score of 88.7% and the media eligibility criteria were very eligible. The response of health workers from the Paal Lima Community Health Center was 56.8, the percentage of the total score was 87.3% and the media eligibility criteria were very eligible.

3. The eligibility of a healthy dental nutrition card is based on the responses of toddlers and the responses of parents, posyandu cadres and community health center officers

Respondents consisted of 16 toddlers, 16 mothers of toddlers, 4 posyandu cadres, 4 community health center officers, and 2 PKK people. The average age of toddlers is 54 months, the youngest is 45 months and the oldest is 59 months. The gender of toddlers consists of 9 girls (56.3%) and 7 boys (43.7%).

This healthy teeth nutrition card was tested to get responses in the form of interest, material and language from toddlers, parents, cadres, health workers and PKK. This response can be seen in table 3.

Table 3
Responses of Toddlers, Parents of Toddlers, Cadres, Health Workers and PKK to the Healthy Dental Nutrition Card

Indicators	Mean Response Score (Maximum Value for Toddlers = 40, Parents, and others = 65)			
	Toddlers (n=16)	Parents (n=16)	Cadres + PKK (n=6)	Health Workers (n=4)
Interest	13,3	26,8	26,0	25,8
Material	9,0	16,5	17,0	16,8
Language	13,0	14,4	14,7	14,3
Total	35,3	57,8	57,7	56,8
%	88,3	88,8	88,7	87,3
Eligibility Criteria	very eligible	very eligible	very eligible	very eligible

Based on table 3, it shows that the average score for assessing the results of trials on media or responses from toddlers is 35.3 (maximum score 40), with a percentage of the total score of 88.3% and the media eligibility criteria are very eligible. The response of parents of toddlers was 57.8

DISCUSSION

The healthy teeth nutrition card is a development model for parenting patterns to prevent stunting in toddlers. This card measures 10cm x 8cm, consists of 20 cards containing pictures and explanations about caries, causal factors and 4 steps to prevent caries. These cards were developed with an early childhood theme and are efficient for children and health practitioners to carry and play with. It is hoped that parenting patterns in the form of healthy dental nutrition can prevent caries which can affect food intake and nutritional status.

This research is in line with research Wicaksono (2022) that the Happy Teeth card game is an educational media innovation about how to maintain healthy teeth and mouth that is interesting and interactive. Happy Teeth received positive responses from elementary school students and teachers. Students will understand what can be done to maintain healthy teeth and mouth, such as understanding what foods and drinks are good or bad for teeth, the right time to brush teeth, and actions that can be taken when there are problems with teeth and mouth such as bad odor. mouth and dental plaque. Students also feel that Happy Teeth is fun to play, and even want to play it again with friends, teachers and parents (10).

Karin's (2018) research also concluded that the quartet card media could be developed as a health education medium, especially about dental and oral health (11). Suwarjo's (2020) research on Kartini (Dental Animation Magic Card): School Dental Health Business Innovation During the Pandemic. The "KARTINI" innovation has a role as an easy and fun UKGS learning medium (12).

A visual medium, if chosen correctly and appropriately, will have a value equivalent to thousands of words, also emotionally able to attract more attention, and another possibility, can make the message in question less boring/boring, so it can make the learning process easier, interesting and fun (13). It is hoped that the Healthy Teeth Nutrition Card can influence the interest and curiosity of young children in preventing dental caries.

Dental caries is one of the dental health problems that children are prone to. Dental health is important, especially for children's development. Dental caries causes children to experience loss of chewing power (impaired chewing function), affects appetite, nutritional intake and disruption of digestion and results in less than optimal growth, which ultimately will affect the child's nutritional status (3,4). Promotive and preventive efforts are needed to overcome dental and oral diseases, one of which is through the school dental health program (UKGS) in Kindergarten (14).

Healthy teeth nutrition cards are very appropriate and suitable to be given to young children because using cards while playing is in accordance with the child's growth and development patterns. At that age children tend to have a great and strong curiosity by exploring objects and the environment around them. By playing, young children can master the material about dental caries and its prevention on the cards in a comfortable and interesting atmosphere. Healthy dental nutrition cards have benefits and uses, including: 1) Early childhood children learn to understand the concept of dental caries and its prevention, 2) Sharpen abilities and social skills because the game is played by 2-3 children, 3) Children hone cognitive development by designing winning strategies games, 4) Early childhood learn sportsmanship because in a game there are those who lose and there are those who win, 4) increase insight and knowledge about the health messages on the cards and 5) These cards can be used as a parenting pattern for early childhood with their parents and health practitioners prevent caries which can affect food intake and nutritional status.

Parenting patterns (feeding practices) are one of the efforts to reduce stunting, targeting families and communities through various programs and activities (6). To increase family knowledge about nutrition, interesting and informative educational media is needed, so that delivering educational messages accompanied by message material or tools is expected to make it easier to remember the messages given. Information media can stimulate targets to carry out messages and help enforce knowledge that has been received so that it will remain stored in memory longer (7,8).

Children need parental assistance in the process of growth and development, but parents must be able to understand the characteristics of their children so that parents can place themselves in the child's development and not impose personal desires on the child which can have an impact on future development (15).

Parenting is basically a practice carried out by other, more mature people towards children which is related to meeting food and nutritional needs, basic care, adequate housing, personal hygiene, environmental sanitation, clothing and physical fitness. The need for adequate and balanced food is the most important need for care. To fulfill care in providing food, it really depends on the nutritional knowledge of the mother and family. Basic health care is important to reduce morbidity and mortality from diseases, such as taking sick children to the nearest health service, first aid for children with diarrhea and fever medication for children with fever. Healthy children will grow well, in contrast to sick children, whose growth will usually be disrupted (16).

The way of parenting will also influence the occurrence of stunting, even though there is sufficient food at home and the family lives in a safe and healthy environment and has access to health services, children can still experience malnutrition. Inadequate care for children and women is the third element causing malnutrition that must be taken into account. Parenting of children and mothers is also the responsibility of the entire family and community, especially if mothers need

support and assistance in caring for children in the form of providing food, maintaining children's health, and providing cognitive stimulation (17).

CONCLUSIONS

Conclusions are presented briefly, narrative, and conceptual that describe the research findings and their effects. Avoid using numbering and symbols (bullet and numbering).

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