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Knowledge About Caries Using Busybook Media in Elementary School Shildren (in RT 04 Dusun Kramat Jajar Tunggal Wiyung Surabaya)

Eka Nurazzah Khuzaimah^{1*}, Sunomo Hadi², Agus Marjjianto³

^{1,2,3} Department of Dental Health, Polythectnic of Health Ministry health, Surabaya, Indonesia

**Corresponding author: azzahzv@gmail.com*

ABSTRACT

Background: Dental caries represents a major public health concern problems in elementary school children. It is known that children find it quite difficult to maintain their dental health so that there are high cases of caries in children, especially in elementary school (SD). **Object:** The purpose of this study was to measure caries knowledge before (pretest) and after (posttest) counseling using busybook media. **Method:** The sample of this study was children in the RT 04 Environment of Kramat Jajar Tunggal Wiyung Surabaya Hamlet, taken by by applying simple random sampling with the Slovin formula, the sample obtained consisted of 43 samples of children who participated in this study. This study applies a pre-experimental design using the one-group *pretest–posttest* model, where measurements are taken before and after the intervention on the same group provision of an initial questionnaire before counseling (pretest) and the provision of a questionnaire after counseling (posttest). Data collection techniques are carried out using simple data analysis calculation techniques by calculating the difference between the pretest and posttest scores. **Results:** The results of the data analysis found that the pretest value was in the poor category, namely 46% with the level of knowledge before the counseling was carried out, and there was an increase of 44% in the posttest value with a good category, namely 90% After the counseling took place, differences were identified in the knowledge levels of the children, showing the level of knowledge of children in the RT 04 Dusun Kramat Jajar Tunggal Wiyung Surabaya environment after counseling with busybook media was in the good category.

Keywords: Knowledge, Caries, Busybook, Children

BACKGROUND

Oral and dental health problems, particularly tooth decay, are a disease affecting nearly half the world's population, with approximately 3.58 billion people suffering from it. Based on data from the 2018 Basic Health Research (Riskesdas), the biggest dental problem in Indonesia is tooth decay, or caries, reaching 45.3% (Sholekhah, 2023).

According to data from the Indonesian Dentists Association (PDGI) Executive Board, at least 89% of cavities are school-aged children under 12 years of age. Therefore, elementary school children

are highly susceptible to dental diseases, such as caries and gingivitis (Sutomo, 2020).

According to the 2018 Basic Health Research (Riskesdas), the most common dental health problems experienced by Indonesians are tooth decay, cavities, or pain, with a prevalence rate of 45.3%. This information, furthermore, from the Basic Health Research (Riskesdas), also shows that the prevalence of dental caries in children aged 3-4 years is 81.1%, in children aged 5-9 years 92.6%, and in children aged 10-14 years 73.4%. Half of

the 75 million children in Indonesia suffer from dental caries, and this number is increasing year by year (Dewi et al., 2024).

Dental caries, also known as cavities, is a condition in which bacteria damage tooth structures such as enamel, dentin, and cementum. This damage results in the formation of cavities. Dental caries is chronic and develops gradually over a long period (Nurahmadina et al., 2022).

Factors contributing to the development of caries include gender, age, level of knowledge, dental hygiene habits such as brushing, and dietary patterns. Some bacteria in dental plaque can convert sugars or carbohydrates from food and drink into acids, which then dissolve tooth minerals, causing decay (Sainuddin, 2023).

Based on the results of an initial survey of 48 selected elementary school-aged children, it was found that of the 43 children, 74% (32) were affected by caries, and 26% (11) were free from caries. According to the researchers' figures and the available percentages, the caries prevalence among children in RT 04, Kramat Hamlet, Jajartunggal, Wiyung, Surabaya, is considered high.

Using busybooks to broaden children's understanding of dental caries and its prevention efforts, this study found an increase in children's knowledge. This study differs from the study that the researchers will use, specifically for elementary school-aged children, to determine changes in children's knowledge about dental caries (Darmawangsa et al., 2023).

RESEARCH METHODS

The research used descriptive research. This type of data is in the form of numbers or converted into numerical form (scoring), allowing for statistical analysis. Generally, this data is collected through research instruments such as questionnaires or questions with weighted answers (Mustofa, 2023). The purpose of this study was to explore various factors that may influence individuals' intentions to maintain

dental health as caries prevention. To address this research objective, the researcher designed a study that clarified the definition, cause and effect, and prevention.

RESULT & DISCUSSION

The location of this study was in RT 04, Kramat Hamlet, Jajartunggal, Wiyung, Surabaya. Kramat Hamlet is one of the hamlets in the city of Surabaya. This study describes the knowledge of caries among 43 elementary school-aged children in RT 04, Kramat Hamlet, Jajartunggal, Wiyung, Surabaya.

Table 1.

Number of elementary school-aged children in RT 04, Kramat Hamlet, Jajartunggal, Wiyung, Surabaya

No	Child Characteristics	Number	%
Gender			
1	Male	12	28
2	Female	31	72
Total		43	100

Based on table 1 above, it can be seen that the number of children in the Elementary School (SD) age category in the RT 04 environment of Kramat Hamlet, Jajartunggal, Wiyung, Surabaya, with the male gender being 12 children, and the female gender being 31 children.

Table 2.

Distribution of Knowledge Values regarding the meaning of dental caries in elementary school-aged children in RT 04, Kramat Hamlet, Jajartunggal, Wiyung, Surabaya using busybook.

Questions	Respondents Answers	
	Pre test	Post test
What is dental caries?	19 (44%)	43 (100%)
What are the correct steps to maintain dental health?	16 (37%)	32 (74%)

Questions	Respondents Answers	
	Pre test	Post test
Why should we maintain dental health?	20 (47%)	43 (100%)
Why should we visit the dentist every 6 months?	15 (35%)	43 (100%)
Total	70	161
Avarage	40,75%	93,5%
Category	Poor	Good

Table 2 shows that only 40.75% of children were able to answer questions about the definition of dental caries correctly. This indicates that children's understanding of dental caries is still lacking. Furthermore, after counseling using the busybook, children's knowledge increased, with 93.5% of the children's answers correct. This indicates that children's understanding of the definition of caries has improved.

Table 3.

Knowledge about the causes of dental caries in elementary school-aged children in RT 04, Kramat Hamlet, Jajartunggal, Wiyung, Surabaya, using the busybook.

Questions	Respondents Answers	
	Pre test	Post test
What causes cavities?	15 (35%)	39 (91%)
What do I do now that I know how to maintain dental and oral health?	21 (49%)	35 (81%)
Total	36	74
Avarage	42%	86%
Category	Poor	Good

Table 3 shows that only 42% of children were able to answer questions about the causes of dental caries correctly. This indicates that their understanding of

the causes of dental caries is still lacking. Furthermore, after counseling using the busybook, children's knowledge increased, with 86% of the children responding correctly. This indicates that children's understanding of the causes of dental caries has improved.

Table 4.

Distribution of Knowledge Scores on the Factors of Dental Caries in Elementary School-Aged Children in RT 04, Kramat Hamlet, Jajartunggal, Wiyung, Surabaya, using the Busybook

Questions	Respondents Answers	
	Pre test	Post test
How can we keep our teeth healthy?	23 (53%)	41 (95%)
When is the best time to brush our teeth in the morning?	13 (30%)	31 (72%)
Why does my friend's mother forbid her from buying sweet foods every day?	27 (63%)	43 (100%)
Total	63	115
Avarage	49%	89%
Category	Poor	Good

Table 4 shows that only 49% of children were able to answer questions about the factors causing dental caries correctly. This indicates that children's understanding of the factors causing dental caries is still lacking. Furthermore, after counseling using the busybook, children's knowledge increased, with 89% of the children responding correctly. This indicates that children's understanding of the factors causing dental caries has improved.

Table 5.

Distribution of Knowledge Scores about Characteristics in Elementary School-Aged Children in RT 04, Kramat Hamlet, Jajartunggal, Wiyung, Surabaya, using the Busybook

Questions	Respondents Answers	
	Pre test	Post test
If our teeth hurt, what should we do?	25 (58%)	31 (72%)
What will happen if we let our teeth get cavities?	21 (49%)	43 (100%)
If our friends have cavities, what should we do?	18 (42%)	35 (81%)
If there's a dental checkup in our neighborhood, what should we do?	17 (40%)	41 (95%)
Who is responsible for providing dental health care for children?	22 (51%)	43 (100%)
If our friends don't take care of their dental health, what should we do?	28 (65%)	35 (81%)
Total	131	228
Avarage	51%	88%
Category	Poor	Good

Table 5 shows that only 51% of children were able to answer questions about characteristics correctly. This indicates that their understanding of characteristics is still lacking. Furthermore, after counseling using the busybook, children's knowledge increased, with 88% of the children responding correctly. This indicates that children's understanding of characteristics has improved.

Discussion

Based on the results of a study of elementary school children in RT 04, Kramat, Jajar Tunggal, Wiyung, Surabaya, the aim was to compare their knowledge levels about dental caries before and after education using busybooks. The results showed an increase in knowledge from "poor" to "good." This is evident in the following description:

Knowledge of caries among elementary school children in RT 04, Kramat, Jajar

Tunggal, Wiyung, Surabaya using busybooks.

Based on the results of the study, it was found that children in RT 04, Kramat, Jajar Tunggal, Wiyung, Surabaya, before the education about dental caries was conducted, their understanding of dental caries was categorized as "poor." This can be attributed to a lack of insight, both from the individual child and from their playmates/neighbors in the local neighborhood (Arianingsih, 2021).

Counseling using busybook media has good results, where respondents who are still in the elementary school category can easily understand the material from the counseling that the researcher did, so that it can improve the child's knowledge from what was initially in the poor category before the counseling was carried out, and after the counseling with busybook media showed significant results, because the child's knowledge changed to the good category (Jatmika et al., 2025).

Knowledge of the causes of caries in elementary school children in RT 04, Kramat, Jajar Tunggal, Wiyung, Surabaya, using busybooks.

A study conducted among elementary school children in RT 04, Kramat, Jajar Tunggal, Wiyung, Surabaya, found that knowledge of the causes of caries was considered poor. This is a major factor in the high number of caries cases in the neighborhood. Children generally don't care much about their dental health. They tend to enjoy eating and drinking sweets, sweet foods, or cariogenic foods. Cariogenic foods are a major source of dental caries, as they provide the primary food source for bacteria living in the oral cavity (Mayasari et al., 2021). However, after conducting the study using busybooks, children's knowledge improved to a good level (Liasari, 2023).

One medium for dental health education is the use of busybooks. This medium has proven effective in increasing children's knowledge about dental and oral health, particularly regarding dental caries. This media is engaging, interactive, and stimulates children's curiosity (Adam, 2022). This makes it easier for children to understand and remember information, so it can be applied in the habit of maintaining good and proper dental and oral hygiene. Busybooks have been proven to improve elementary school children's understanding of dental health and dental caries (Widayanti, 2020). Their interactive and activity-filled nature helps attract children's attention and makes them more involved in the learning process (Ali, 2019). This media encourages children's curiosity, which is key to better understanding the material. The use of busybooks also helps improve children's understanding of the importance of maintaining dental and oral health (Friadita et al., 2023).

Researchers used busybooks with the topic of cariogenic foods or drinks. Before the counseling, children did not

know what cariogenic foods and drinks were, resulting in a low percentage of understanding about caries with research results categorized as poor (Hidayati et al., 2021). However, after the counseling, children began to understand about cariogenic foods and drinks that can cause caries, so that children's knowledge increased and the results after the counseling were categorized as good (Tawilla et al., 2023).

Knowledge of the factors contributing to caries in elementary school children in RT 04, Kramat subdistrict, Jajar Tunggal, Wiyung, Surabaya, was assessed using a busybook.

Based on the results of the study, it was found that the environmental factors influencing caries are influenced by several factors, including individual, social, family, economic, and environmental factors. Children tend to imitate daily activities, resulting in low levels of knowledge regarding individual factors related to dental caries. However, after counseling, children's knowledge of the factors contributing to caries increased.

According to Octavia (2023), children tend to follow their desires when eating or drinking whatever they like. This suggests that children often consume sweet foods and drinks, but they do not yet understand how to maintain dental health after consuming them.

Researchers use busybook media as a counseling medium because it can be easily understood by children, according to the information above, researchers concluded that many factors can cause caries apart from consumption factors, namely lack of knowledge from the influence of people closest to them such as parents, friends, or closest relatives, where this can affect children's dental health such as rarely brushing their teeth due to friends who do not brush their teeth or parents who do not remind children about brushing their teeth, this increases children's knowledge

about factors that can influence the occurrence of caries so that they get a good category (Aulia et al., 2021).

Knowledge of the characteristics of elementary school children in RT 04, Kramat sub-district, Jajar Tunggal, Wiyung, Surabaya, using busybooks.

Environmental characteristics are also a contributing factor to the emergence of caries. This is because characteristics influence each individual's character, affecting children's knowledge of dental caries. Knowledge of dental caries in the surrounding environment contributes to high caries cases, resulting in a poor level of knowledge of the characteristics of the environment (Utami, 2023). However, after counseling using busybooks, children's knowledge of the characteristics increased, bringing them to a good level.

The conclusions of several previous studies are inconsistent with the findings of Sholekhah (2023), who examined the relationship between mothers' knowledge of dental and oral health and the incidence of dental caries in toddlers at the Wiratama Integrated Health Post (Posyandu).

Researchers used busybooks to increase children's knowledge of the characteristics of the surrounding environment. This suggests that dental health is the responsibility of each individual (Aqidatunnisa et al., 2022). This can raise children's awareness of the importance of maintaining dental health to prevent cavities. In this case, researchers found that busy books increased children's knowledge of the characteristics, resulting in a good level.

CONCLUSION

The study indicates that elementary school children initially had poor knowledge regarding dental caries—including its definition, causes, contributing factors, and characteristics. Following the Busybook-based educational intervention, their knowledge in all these aspects improved to a good category.

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