



Development of a promotional media model using puzzle media as an effort to increase knowledge of dental and oral health maintenance in Preschool Children

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ABSTRACT

Background: Efforts to increase the knowledge of society in general and school children in particular can be carried out through the Communication, Information and Education (KIE) program. Learning while playing is an effective method for children to increase their knowledge. The media used varies greatly, from oral, singing, printed or written media, games such as snakes and ladders and puzzles, to electronic media such as television and the internet. Puzzles are an interesting game for children, because basically children like attractive colored images. Puzzles can train finger dexterity and hand-eye coordination, as well as the cognitive concept of matching shapes and parts to wholes. Objective: To determine the effect of Health Promotion using puzzle media in increasing preschool children's dental health knowledge. Method: This study used a one group pretest and posttest design by providing treatment and measuring preschool children's knowledge before and after treatment. Results: The results of the analysis obtained a significance value of <0.05 . Conclusion: There is an influence of puzzle media in increasing the knowledge and dental hygiene of preschool children.

INTRODUCTION

The Communication, Information and Education Program is one way to increase knowledge, especially for elementary schools and generally for the community to increase knowledge (Appleton, 2013; Wu et al., 2017). Delivery of material in the KIE program can be done using several methods and media (Lin et al., 2017). The media used varies greatly, from oral, singing, printed or written media, games such as snakes and ladders and puzzles, to electronic media such as television and the internet (Hapsari et al., 2022; Purnama et al., 2020).

Puzzles are an interesting game for children, because basically children like attractive colored images (Nurwanti et al., 2019). Puzzles can train finger dexterity and hand-eye coordination, as well as the cognitive concept of matching shapes and parts to wholes (Satriani & Ilyas, 2019).

The health education method using puzzle media is very suitable for teaching children to brush their teeth properly and correctly because it is more interesting, interactive, and trains children's strength and fine motor skills (Hutami et al., 2019). This method can also build and motivate as well as create an entertaining atmosphere and reduce boredom in the learning process (Kapp, 2012).

Research results (Pay et al., 2023) show that between puzzle media and lecture media on dental health knowledge, puzzle media is better understood by students compared to lecture media, because puzzle media is more interesting because it contains pictures so it is useful for increasing students' knowledge.

Researchers are interested in conducting research on the development of promotional media models using puzzle media to increase knowledge about maintaining dental and oral health in preschool children

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METHOD

This research is descriptive research in which observations are made on a number of characteristics of the subject according to the actual situation without any manipulation or intervention by the researcher. The research design used was a one group pretest and posttest design, by providing treatment in the form of counseling using puzzle media to children in RA Assalam, Purbaratu District, Tasikmalaya City. The total sample of preschool children was 31 children. The results of this research will be analyzed using the SPSS program.

RESULT

The research subjects are based on the age of RA Assalam Purbaratu's children, which can be seen in the following table:

Table 1. Frequency Distribution of Research Samples Based on Age

No.	Age	Frequency	Percentage (%)
1.	4-5	15	49
2.	5-6	16	51
Total		31	100

The table 1 above shows that the majority of children are in the 5-6 year age range, 16 people (51%).

Table 2. Frequency distribution based on knowledge before and after intervention

Knowledge	Before		After	
	F	%	F	%
Poor	15	48	0	0
Sufficient	10	33	9	29
Good	16	19	22	71
Total	31	100	31	100

Based on these data, it can be seen that there was an increase in preschool children's knowledge before and after being given it as seen from the categories obtained, namely in the pretest the majority were in the poor category at 48% and at sufficient at 33%, while in the posttest the majority were in the good category at 71% and the adequate category at 71%. 29%.

Table 3. Results of differences in preschool children's knowledge before and after intervention

Variable	p-value
Knowledge	0.000

Based on these results, a significance value <0.05 was obtained, thus H_0 was rejected, so it was concluded that there was a difference in the pre-test and post-test knowledge of preschool children before and after using puzzle media.

Table 4. Frequency distribution based on PHPM score before and after intervention

PHPM	Before		After	
	F	%	F	%
Bad	17	54	0	0
Not enough	9	30	5	16
Good	5	16	21	68
Very Good	0	0	5	16
Total	31	100	31	100

Based on the data in the table, it can be seen that there has been an increase in dental and oral hygiene for preschool children before and after being given education about dental and oral health using puzzle media. This can be seen from the categories obtained, namely in the pretest, the majority got the bad category at 54% and the poor category at 30%. while in the posttest the highest number was in the good category as much as 68% and in the very good category as much as 16%. This shows that the puzzle media used in dental and oral health education for preschool children is effective in improving the dental hygiene of preschool children.

Table 5. Results of differences in preschool children's PHPM score before and after intervention

Variable	p-value
PHPM Pre-test Pos-test	0.000

Based on these results, a significance value of <0.05 was obtained, thus H_0 was rejected, so it was concluded that there was a difference in the pre-test and post-test of dental hygiene before and after education using puzzle media.

**Figure 1.** Media puzzle design

DISCUSSION

Puzzles are effective in improving dental hygiene. Education using the right media will be very useful in providing knowledge to the audience. Good knowledge is ultimately expected to influence a person's behavior to be able to behave in accordance with that knowledge (Nurwanti et al., 2019).

Based on the research results, data showed that there was an increase in the knowledge of preschool children in RA Assalam Purbaratu, Tasikmalaya City before and after the intervention providing education on how to maintain dental and oral health using puzzle media, the same thing also happened to the state of dental and oral hygiene as measured by PHPM, there was an increase in dental and oral hygiene after the intervention provided education on how to maintain dental and oral health using puzzle media.

The results of this research are in accordance with research by (Kurniasih, 2017) which states that playing puzzles affects children's toothbrushing skills. This indicates that puzzle media is media that can be arranged systematically well in advance so that the information given to respondents can be designed well. Through puzzle media the information provided is arranged systematically so that it makes it easier for someone to understand what information the media provider wants to convey. the. Apart from that, it can also improve the synchronization of children's brain and motor skills.

CONCLUSION

Based on the research results, data showed that there was an increase in the knowledge of preschool children in RA Assalam Purbaratu, Tasikmalaya City before and after the intervention providing education on how to maintain dental and oral health using puzzle media, the same thing also happened to the state of dental and oral hygiene as measured by PHPM, there was an increase in dental and oral hygiene after the intervention provided education on how to maintain dental and oral health using puzzle media.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest

ETHICAL CLEARANCE

All participants were signed the informed consent prior to the data collection

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