

Snakes and Ladders Game Innovation on Increasing Knowledge and Behavior Changes About Oral Dental Health in Children at Al Barokah Orphanage

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ABSTRAK

The traditional game of snakes and ladders is a local wisdom, educative for children to play while learning so that it can be used to increase knowledge and skills of dental health. The purpose of this study was to design an innovative snake and ladder game that serves to increase knowledge about dental and oral health. This research is the development of existing research. In this study, an innovation of the snake and ladder game was developed for dental and oral health. Research design *quasi experiment by design Pretest-Posttest control group design*. The sample is elementary school age children at the Al Barokah Orphanage. 17 children became the control group and 17 as the neutral group. The independent variable is Snake Ladder Game Innovation, the dependent variable is knowledge and changes in dental health behavior, with instruments in the form of a questionnaire and a check list of 25 questions on an ordinal scale of pre-test and post-test instruments.. The most pre-test results with sufficient knowledge category are 22 respondents (76.4 %), the most final knowledge score (Posttest) with good knowledge category is 26 respondents (64.7%). The results of the Mann Whitney statistical test showed that there was a difference between the experimental group and the control group on dental and oral health knowledge with a value of $0.02 < 0.05$. The results of the *Wilcoxon Test* statistical test showed that there was a difference between the *Pretest* and *Posttest* of the experimental group with a value of $0.00 < 0.05$ and the control group with a value of $0.00 < 0.05$. The results of the *Mann Whitney* statistical test showed that there was a difference between the experimental group and the control group on dental and oral health knowledge with a value of $0.02 < 0.05$.

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Introduction

Children and adults have different oral hygiene, that is, children have a tendency to be worse. This is due to the consumption of foods and beverages that cause caries in large quantities. At the age of children, caries occurs a lot because they like to eat sugar.

Lack of knowledge in maintaining oral health in the community is one of the causes of problems that arise in dental health. One of the causes of these problems can come from behavioral factors and people's attitudes in their dental and oral hygiene.

Increased knowledge can be done with dental health education or counseling for vulnerable groups in children aged 6-12 years, where at that age they experience a change of teeth from deciduous to permanent or are in the mixed dentition period³.

Children in effective counseling can use a combination of learning and playing methods. This can be caused because in playing the learning process also takes place. When there is a learning process while playing, the emphasis is on the learning process, but when playing while learning the emphasis is on playing. The principle of learning while playing students in the learning process to solve problems is carried out in a pleasant atmosphere⁴.

In learning media selection can be divided into two, namely traditional and advanced media based on technological developments⁵. There are various traditional media, one of which is snake and ladder. Snakes and ladders game is an easy, inexpensive game, children can learn to work together, build a healthy sense of competition, improve socialization skills among friends⁶.

Snakes and ladders is a suitable game choice for orphans, this is because it is supported by short writing and interesting pictures. The innovation of the snake and ladder game by making different colors in each column makes the learning atmosphere more fun⁷.

The game of snakes and ladders has several benefits that make this game an educational game, where children learn to compete, develop critical thinking, decision making and others⁸. Children are also trained to have concentration to solve problems, improve socialization, count, train children to regulate their behavior, and assess the abilities of themselves and others⁹.

Children have instincts in playing. Play at home, at school, at recess, in the neighborhood, and in other places such as orphanages. Al Barokah orphanage located on Jalan Tanjungsari Street RT I RW II Sumurboto, Banyumanik has foster children as many as 87 girls and boys. Among these children 34 occupied elementary school aged 6-12 years. In the process of learning they get more religious knowledge than the general public. This does not rule out the possibility of them getting a good general education. The orphanage provides private lessons by bringing in teachers and a multipurpose room to play comfortably. One of the games they play is snakes and ladders.

The results of a preliminary study showed that many of them could not answer questions related to teeth and mouth in children 6-12 years old. On the question of the right time to brush their teeth and the time to check their teeth 12 of 34 children answered incorrectly. This can be compared to age-appropriate questions related to religion and general knowledge, they answered better than oral health.

Based on this, researchers are interested in conducting research with the title "Increasing Knowledge and Behavioral Changes in Oral Dental Health with Snakes and Ladders Game Innovation for Children at Al Barokah Orphanage".

Material and method

This type of research uses a quasiexperimental design with a pre-test-posttest control group design. The research population was 57 children from the orphanage. The sampling technique is purposive sampling. The research sample was 34 children aged 6-12 years with 17 control groups and 17 experimental groups according to the inclusion and exclusion criteria.

Result and discussion

This research was conducted on June 29, 2018 with the following results:

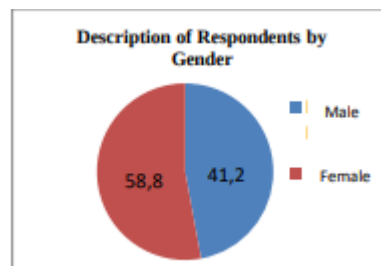


Figure 1 Distribution of Respondents by Gender

Respondents with the most male gender participated. Men in the knowledge group are 8 people (47.1%) and men in the behavior group are 12 people (70.5%). Women in the knowledge group are 9 people (52,9%) and women in the behavior group are 5 people (29.5%).

Tabel 1 Knowledge Category Based on Pre Test and Post Test

Tabel 1 Knowledge Category Based on Pre Test and Post Test

Variabel	Experimental Group		Control Group	
	Before %	After %	Before %	After %
Knowledge Less	35.3	0	23.5	0
Sufficient	52.9	11.8	76.5	35.3
Good	11.8	88.2	0	64.7
Total	100	100	100	100

Based on table 1, both the experimental and control groups had good pre-test knowledge. Final knowledge was good 88.2% in the experimental group and 64.7% in the control group with good final knowledge results as well.

The results of the data normality test using Shapiro - Wilk for Pre Test and Post Test in the experimental group and the control group showed that all data were normally distributed or had a p value > 0.05 except for the post test data in the experimental group, the results of the data were abnormal with p < 0.05.

Tabel 2 The Results of the Pre-Test

Knowledge	P Value Score	Interpretation
Experimental Group	0.002	Ha accepted
Control Group	0.000	Ha accepted

Based on table 2 with unpaired t-test analysis in the experimental and control groups, there are differences in knowledge of oral and dental health because the P value <0.05.

Tabel 3 Post Test Different Test Results

No.	Group	N	p value Score	Conclusion
1.	Experiment	7	0.02	Ha accepted
2.	Control			

Based on table 3 with the Independent Sample T-test (Mann Withney) it was found that the p value was $0.02 < 0.05$ that there was a significant difference in knowledge of oral and dental health between the experimental group and the control group.

Knowledge of Oral Dental Health in the Experimental Group. The results of the study using statistical tests showed that the snake and ladder game innovation had an effect on increasing children's knowledge at the Al Barokah Orphanage. This can be caused because in the game of snakes and ladders children learn to compete, develop critical thinking, decision making and others¹⁰. Changes in knowledge of oral health in children before and after show that snakes and ladders can help children in increasing their knowledge of oral health. It is known that the snake and ladder game developed for education is effective in improving student learning outcomes¹¹.

Sufficient pre-test results on oral dental health knowledge can occur, one of which is that the dental health education program at the Al Barokah Orphanage is not optimal. The dental health education program that is not running actively causes the oral health knowledge of orphans to be less good. The results after the intervention with snakes and ladders resulted in the knowledge of the child's post-test being good. This is in line with the theory presented¹² education can affect a person's knowledge.

A person's knowledge is generally obtained from the five senses¹³. In this case, the cause of changes in children's knowledge can be caused by the snake and ladder innovation game which focuses on the five senses of the eye. Visual media is media that focuses on the sense of sight. This is in accordance with the innovation of the snake and ladder game by making different colors in each column making the learning atmosphere more fun¹⁴. In this snake and ladder game, children can read question and answer cards in a snake and ladder box connected to a snake and ladder.

Knowledge of Oral Dental Health in the Control and Experiment Group. Statistical tests showed the results, namely counseling using snakes and ladders game media as a form of health education with Educational Education Tools (APE) had an influence on children's knowledge. This happens when children get a stimulus of knowledge from snakes and ladders so that their dental health knowledge can increase and it is hoped that children can carry out or follow up from knowledge into behaviors that are carried out in their daily lives. This process can occur because a person's behavior can be formed when there is a reaction from a stimulus or stimulation from outside oneself¹⁵.

The results of this study are that there is a change in knowledge of oral dental health in orphanage children after being given snake and ladder counseling. The delivery of dental health material is done by providing direction and motivating children more and with rewards so that children are enthusiastic in understanding the dental health material presented. Providing interesting information and a pleasant atmosphere can help children feel joy and comfort so that children do not get bored easily and the material presented is more easily absorbed. The game of snakes and ladders is designed as an effective alternative

media in dental health education for children so as to assist them in receiving dental health education. To see the effectiveness of the snake and ladder game media, it can be compared with other comparison media in assisting in health promotion in dental health education

Conclusion

Most of those who took part in the study were boys (58.8%). Most of the students' pre-test got good results in 22 people (64.7%) and 26 people (76.4%). The results of the statistical test showed that the difference between the pre test and post test in the control and experimental groups was $0.00 < 0.05$. In the different test results the experimental and control groups obtained $0.02 < 0.005$, which means that there are differences between the two groups.

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