

Influence of Puzzle Game toward the Level of Knowledge among Elementary Students at Kedungpedaringan 1

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Abstract: The incidence of cardiac arrest outside the hospital is still frequent and even increasing frequency. While CPR volunteer assistance has been widely reported at low rates in various parts of the world. This requires the existence of other recommended methods and methods so that the level of availability and knowledge of CPR volunteers becomes greater. Teaching to early age is recommended because the earlier they know the management of CPR, the better their knowledge will be in the future. Children are learners who are quick and easy to motivate. This then encourages researchers to examine alternative methods that can be used to increase the knowledge and number of CPR Volunteers. The purpose of this study was to find out the benefits of using Puzzle games in increasing knowledge about CPR in the elementary student of SD Kedungpedaringan Kepanjen. The research method was Quasy experimental. The sample used was 44 people by simple random sampling. Samples were divided into two experimental groups; group 1 used standard teaching techniques (SAP), Group 2 used Puzzle games. The result was a significant effect ($p < 0.01$) between learning using SAP / Module and Puzzle Games on the level of knowledge of respondents before and after treatment. Responded stated that he preferred learning using the Puzzle game. Discussion: Puzzle game is a form of an educational game that functions not only as a means of play but also as a form of education to students. The function of the game is to create a pleasant atmosphere for students. With a pleasant atmosphere, students can receive and understand information that is conveyed more easily.

1 INTRODUCTION

Hospital Outpatient (HOURS) is an event of someone's heart-stopping that takes place outside the Hospital. Handling of HJLRS is by performing Lung Heart Resuscitation (RJP) immediately, where this RJP is done by RJP Volunteers or anyone who can provide RJP assistance at that time (Ann-Britt, 2007). Bobrow and Bentley, in 2010, examined the assistance of RJP Volunteers. The results in 2005, RJP Volunteer assistance provided as much as 28.2% of the total incidence of HJLRS, obtained by patients who survived was 3.7%. In 2009, with the help of CPR volunteers as much as 39.9% of the total incidence of HJLRS, it was found that the survivors were 9.8%. The more people who can provide RJP assistance, the higher the level of HJLRS patient safety (Bobrow, Bentley, 2010).

Meanwhile, there are not many available RJP volunteers in various countries. Vaillancourt in Ottawa said that out of more than 5,000 HJLRS

incidents, only 35.2% of aid was provided by RJP volunteers (Vaillancourt, 2008). The low level of CPR volunteer assistance has been widely reported in various parts of the world (Abella, 2008). Several reasons have been found by various studies, where one of the main factors is people's unwillingness to learn CPR. People are reluctant to learn CPR in the form of training because they have no interest, the complexity of CPR procedures, unwillingness to attend training classes, and have physical limitations (Nichol G, 2008).

Other methods and methods are recommended so that the level of RJP Volunteers is more available. Improvement of community knowledge no longer has to follow the old way but more creatively (Abella, 2008). Teaching to an early age is recommended because the earlier they get to know the RJP management, the better their knowledge going forward. Children are fast and easy learners to be motivated. Jones (2007) found that children aged 6 to 7 years can provide basic life support well to

unconscious victims, and at the age of 13-14 years, they can provide chest compression competently.

This then encourages researchers to examine alternative methods that can be used to increase the knowledge and number of CPR volunteers. The use of Image Puzzle toys is the choice of researchers. Image Puzzle is a game that is easy to use and play for children. By using the RJP management image as a puzzle that they will dismantle, the information will be conveyed to them. The concept of the picture puzzle that the researchers designed was how to convey basic RJP material to children in a way that they could like, namely, through the play method. With picture puzzles, children feel happy and cheerful but can still provide RJP information from the pictures they see in the form of RJP data concepts. In addition to increasing knowledge, we also hope to increase children's willingness to assist CPP Volunteers.

2 METHOD

The research method used Quasy experimental, which is an impure experimental method that cannot strictly control the sample or method used. The sample used was 44 people who were obtained by simple random sampling.

Samples were randomly selected according to the sampling formula for experimental research. Furthermore, the sample was divided into 2 experimental groups, namely group 1, as a control group using standard teaching techniques (SAP). Group 2 uses puzzle games for 3x50 minutes. The treatment is given under the provisions above, and then the next step will be carried out.

The variables in this study are the Independent and the dependent variables. The independent variable in this study is the provision of teaching through the puzzle game method. While the dependent variable in this study is the level of knowledge, data collection will be done through questionnaires given pre and post research.

Data processing techniques based on the steps of Editing, Coding, Data Entry, Cleaning, and tabulating.

3 RESULTS AND DISCUSSION

The result of the study described in table 1

Table 1: Univariate and Bivariate Analysis of Variable Knowledge

Group	Mean	SD	Min-Max	p (pre-post)
Pre				
Group 1	37,08	12,67	15- 60	
Group 2	47,50	8,47	30- 70	
Post				
Group 1	50.00	7,52	30-55	0,001
Group 2	58,75	8,09	50-75	0,000

Group 1: Control Group using module/SAP
 Group 2: Experiment Group using 'puzzle Games
 Bivariate test using Wilcoxon

In Table 1, the researcher presents the respondent's knowledge variable data before and after treatment is given to each group. The group with the 'puzzle game' treatment only, that is in group 2, experienced an increase in knowledge after being treated compared to before treatment. The increase in the value of knowledge in group 2 is the mean before treatment 47.5 increased to 58.75 after treatment. While the control group that received SAP counseling treatment also experienced an increase in the average value of knowledge from before the treatment mean 37.08 after the treatment obtained a mean of 50.00. When compared, the average increase in the value of knowledge of group 2 between before and after treatment was 12.92 greater than the increase in the average knowledge of group 1 by 11.25.

From table 1, we can also see the results of the Bivariate Test between before treatment and after treatment using the Wilcoxon Test for each group. In group 1 or using SAP, the test results obtained 0.001 or less than 0.05, which means there is a significant difference between the average value of knowledge before treatment and the average value of knowledge after treatment. In group 2 or using Puzzle Games, the test results <0.001, which means there is a significant difference between the average value of knowledge before treatment and the average value of knowledge after treatment.

Table 2: Results of the Mann-Whitney Bivariate Analysis between group 1 and group 2

Group	P-Value	Group
Group 1	0,001	Group 2

This analysis aims to compare the post-treatment values between group 1 using SAP with Group 2 using a Puzzle game. From the table above,

p-value <0.05 is obtained between group 1 and group 2, which means there is a significant difference from the value obtained by group 1 and group 2.

In Table 2, the researcher presents the respondent's knowledge variable data before and after treatment is given to Group 1 which is given treatment using the SAP Module only. When viewed from the average value of knowledge, it is known that there is a significant increase from an average value of 61.2 to 80.8. This is evidenced by the paired T-test analysis test, which shows the value of $p < 0.01$, which means there is a significant difference between the value of knowledge before treatment with the value of knowledge after treatment.

From table 3 below, it can be seen in more detail in which part of the knowledge variable is increasing in each group. In the sub-1 knowledge variable, between the 2 control groups using SAP (Group 1) and the Group using Puzzle (Group 2), groups 1 and 2 received the highest increase in correct answers related to 'Symptoms of cardiac arrest', which increased about 5 answers in both groups, while the question 'Help if the victim knows there is no pulse?' experienced a decrease in correct answers especially in group 2 from 14 correct answers decreased to 9, and group 1 decreased from 15 correct answers to 14 correct answers.

Table 3: Sub-Analysisist on Variabel Knowledge based on Sum of True Answer

Question	Kel 1 (pre-post)	Kel 2 (pre-post)
Sub-1		
Understanding RJP	8-12	0-5
Help when seeing someone fall/faint	9-14	18-18
Help if the victim is unconscious?	6-10	11-13
Help if the victim knows there is no pulse?	15-14	14-9
Benefits of RJP	8-9	11-9
Stop cardiac arrest	12-14	8-8
Signs of Symptoms of cardiac arrest	8-14	5-11
Sub-2		
Understanding RJP Volunteers	14-10	18-16
Benefits of RJP by volunteers	9-11	4-10
Chest compressions; breath	5-14	7-17
RJP Principle	9-14	2-14
Can CPI volunteers contract the disease while helping?	7-13	14-19
Is RJP breaking the law?		
When do volunteers stop helping?	12-17	14-16
	4-9	4-6
Sub-3		
Definition of Chain of Survival	5-11	11-14
The first chain of Survival	10-15	11-6
The second chain of Survival	10-15	4-11
The third chain of Survival	4-8	7-9
The fourth chain of Survival	15-8	11-13
The nature of the management of the Chain of Survival	8-8	16-11

Sub 1: Knowledge of CPR

Sub 2: Knowledge of CPR Volunteer

Sub 3: Knowledge of Chain of survival

n = 17

In the sub-2 knowledge variable, between group 1 (the control group using SAP) and 2 (the puzzle use group), group 2 received the highest total increase in incorrect answers. In this sub-2 of knowledge, group 4 received the highest increase in questions about the 'RJP Principle', which increased from 2 correct answers to 14, then followed by questions about data

Chest compressions; breath ', where before treatment there were only 7 correct answers increased to 17.

In the sub-3 knowledge variable, group 2 also got the highest total increase in correct answers compared to group 1. The highest increase in group 2 in sub-3 was obtained from questions about the 'second chain of survival' were before four

treatments; only the correct answers increased to 11 with the right answer.

From the data table, it is found that respondents get an increase in the value of knowledge after treatment, both in the control group and the experimental group. Wilcoxon test results obtained data $p < 0.05$, which means there are significant differences in the value of knowledge between before and after the puzzle game treatment.

Knowledge is a process that is passed by an individual through various kinds of sense of acceptance he has. The process that develops in a learning process will be stored in the form of memories where these memories can be reopened in the future. This suggests that the intensity of someone or someone's attention to the learning process will affect how much results are achieved in learning. Most of one's knowledge is obtained through the sense of hearing (ears), and the sense of sight (eyes) (Notoadmodjo, 2005 p.50).

Several things affect one's level of knowledge. Internal factors such as education are needed to get information (such as things that support health to improve the quality of life). Education can affect a person including one's behavior about lifestyle, especially to participate in the development of knowledge. Another factor is the environmental factor. The environment is a condition that exists around humans, where he can influence the learning process. The next factor is socio-culture, where socio-cultural systems that exist in society can influence the attitude in receiving information (Notoadmodjo, 2005).

Puzzle games are included in Educative Learning Media. Educative learning media here is the media used for student learning, which is more familiarly referred to as an educational game tool (APE). APE is "a game tool deliberately designed specifically for educational purposes" (Mayke Sugianto, T, 1995). Meanwhile, according to Suyadi (2009: 53), what is meant by APE is "all forms of play that can provide knowledge and abilities of children." Thus this educational play tool is a tool used for playing children but can help the learning process of students by developing certain aspects of children.

According to Sudono in Suyadi (2009: 53), this game can be created by making a game that has properties such as loading and unloading, grouping, combining, composing, and others. The teacher can make this type of APE following the needs and environmental conditions of students. Surely this tool must be made as attractive as possible so that students are interested in using it.

In addition to intelligence tests, this educational puzzle game has many functions, including 1) Practicing concentration, accuracy, and patience 2) Strengthening memory 3) Introducing children to the concept of 'relationships' 4) By choosing shapes, can train children to think mathematically (using left brain). Within the scope of the game, excellent features in the game such as feeling to be challenged, imaginative, and fun, provide the perfect situation for students to be able to connect with learning. Then the competitive nature of the game, where one must defeat their opponents to win through collaboration with friends and set different strategies, has shown significant benefits for learning. Finally, the game in learning allows two-way communication where there is not only material or instruction but also a condition where learning is actively absorbed through different strategies (Baker et al., 2005).

In this study, group 1 received treatment in the form of teaching using the Teaching Program Module / Unit (SAP). Respondents get the material through the lecture method, asking questions and discussions with other friends or teachers who provide the material. This method is one method that is often used to improve public health knowledge in general. Teaching in the context of health is defined as an effort to increase one's knowledge and abilities of existing situations or systems through learning to achieve better health outcomes or understanding (Muninjaya, 2004).

The results obtained by group 1 are in line with research conducted by Afrianto (2013), who uses teaching to increase knowledge of self-protection tools (PPE) for paprika farmers in Kumbo village. There was a significant increase in the knowledge of participants after being given treatment. Of the 20 farmers (65%) who previously had insufficient PPE knowledge, no farmers had less PPE knowledge. Teaching can improve one's knowledge because teaching provides new information to individuals.

4 CONCLUSION

There is a significant increase in the value of knowledge between groups one and group two. Deeper research is needed regarding the appropriate duration and type of learning that can explore the benefits of puzzle educational games to the fullest. The method of learning with puzzle games still needs to be investigated further, whether it can stand alone or should be an additional method of learning that already exists.

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