Indonesian Journal of Global Health Research
Volume 5 Number 4, November 2023
e-ISSN 2715-1972; p-ISSN 2714-9749
http://jurnal.globalhealthsciencegroup.com/index.php/IJGHR

THE EFFECT OF SIMULATION METHODS ON PREPAREDNESS FLOOD DISASTER

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ABSTRACT
Throughout 2022, the National Disaster Management Agency (BNPB) noted 3,531 natural disaster events in Indonesia. The disaster that occurred dominated by floods, namely 1,524 incidents Where amount This equivalent to 43.1% of the total national disaster events. The aim of this research is to determine the effect of simulation methods on flood disaster preparedness at SD Inpres Nipa-Nipa Makassar City. This research uses a " pre-experimental " method with a one group pretest-posttest design. The sampling technique is purposive sampling . sample size was 84 people. This research uses a questionnaire as a data collection instrument. the Wilcoxon test results for video simulations are 0.000 < 0.05 and puzzle simulations are 0.000 < 0.05. This means that there is an influence of video and puzzle simulation methods on flood disaster preparedness at SD Inpres Nipa-Nipa Makassar City. Conclusion study This is there is influence simulation to preparedness disaster flood on Inpres Elementary School students Nipa-Nipa . Recommended to the teacher in school For give education or counseling so that you can increase student knowledge about disaster flood And possible preparedness _ done If happen flood in the future come.

Keywords: flood disaster; puzzle; simulation; students; video

First Received	Revised	Accepted
10 September 2023	14 September 2023	30 September 2023
Final Proof Received		**Published**
25 October 2023		28 November 2023

How to cite (in APA style)
Syam, I., Yulianita, M. E., Efendi, S., Dewi, C., & Zulhijayanti, Z. (2023). The Effect of Simulation Methods on Preparedness Flood Disaster. Indonesian Journal of Global Health Research, 5(4), 993-1000. https://doi.org/10.37287/ijghr.v5i4.2834.

INTRODUCTION

A disaster is an event or series of events caused by various natural and unnatural factors and human factors that threaten and disrupt people's lives and can result in loss of life, environmental damage, property losses and psychological impacts (Ramadan et al., 2022) Flooding is water runoff that exceeds the normal water level so that it overflows from the river trough causing inundation on low land on the river side. Usually floods are associated with rainfall that exceeds normal limits. The cause of flooding is damage to the upstream environment, such as land conversion and illegal logging. In addition, downstream littering until the sewers are clogged and water catchment narrows, which in turn causes water to overflow and inundate the river banks (Ariningtyas, 2020) The simulation method is a technique that can be used to formulate and solve models from a group or class. The simulation method as a teaching presentation method demonstrates and simulates to students about certain situation processes, and students are also involved in this as the simulation is conducted. Simulation is a decision-making model by exemplifying or utilizing a real-life system representation without having to experience it in the actual situation e (Lia, 2022).

Flood preparedness is needed to provide information to reduce the impact of disasters on human life and the surrounding environment. Disaster preparedness emphasizes efforts to

prepare appropriate, fast and responsive capabilities in dealing with disaster management that aims to reduce the impact experienced when a disaster occurs. There are key parameters divided into four categories in disaster preparedness: knowledge and attitudes, emergency planning, early warning systems, and resource mobilization (Siswi et al., 2023). Various records also show that natural disasters in China occupy the top position in the list of the largest natural disasters in the world. The 1931 floods in China claimed about 2-4 million lives. The 1887 Yellow River flood claimed 900,000 to 2 million lives. Meanwhile, the 1566 Shaanxi earthquake claimed up to 830,000 lives. Another major flood occurred again in the Yellow River in 1938, claiming 500-700,000 lives (Floods in China, 2010).

According to the National Disaster Management Authority (BNPB) report, there were 3,531 natural disaster events in Indonesia throughout 2022. The most frequent disaster in 2022 was flooding, with 1,524 incidents. This number is equivalent to 43.1% of the total national disaster events. Based on data, floods in the Nipa-Nipa area were caused by very high rainfall and rising sea levels. The principal of SD Inpres Nipa-Nipa said that when a flood occurs, it results in inaccessible roads to the school due to floodwaters and cannot be passed at all. It is known that there are a total of 106 students in grades 5 and 6 at SD Inpres Nipa-Nipa, Makassar City. The aim of this research is to determine the effect of simulation methods on flood disaster preparedness at SD Inpres Nipa-Nipa Makassar City.

METHOD

This research was conducted at SD Inpres Nipa-Nipa in Makassar City, from July 21 to August 21, 2023. The type of research used was quasi-experimental research utilizing a one-group pretest-posttest design. The purpose was to determine the Influence of the Simulation Method on Flood Disaster Preparedness at SD Inpres Nipa-Nipa. The sample in the research consisted of 5th and 6th-grade students with a total sample size of 84 individuals at SD Inpres Nipa-Nipa, Makassar City. The sampling technique used was purposive sampling.

RESULTS

The results of the data collection are processed and presented in a number of habits accompanied by research. Data analysis was carried out by using Uji Wilcoxon with a value of $p \leq 0.05$ which means that there is a difference between variabeil indeipeindei and variabeil deipeindein. The results of the research that have been carried out can be seen in the description of the subsequent.

Research results

Tabel 1.
Distribution Characteristics of Respondents Video Simulation SD Inpreis Nipa-Nipa Makassar City 2023

Variabel	f	%
Gender		
Man	20	47,6
famale	22	52,4
Class		
class 6	42	100,0
Age		
10	2	4,8
11	30	71,4
12	9	21,4
13	1	2,4

Table 1 shows the distribution of respondent characteristics for the Video Simulation at SD Inpres Nipa-Nipa, Makassar City, in 2023. The majority of respondents were females (52.4%)

and all respondents were from grade 6 (100%). The age distribution shows a majority at 11 years old (71.4%) and the least is 1 person (2.4%).

Table 2.
Distribution Characteristics of respondents Simulation Puzzle

Variabel	f	%
Gender		
Man	16	38,1
famale	26	61,9
Class		
class 5	42	100,0
Age		
9	1	2,4
10	31	73,8
11	9	21,4
12	1	2,4

Table 2 presents the distribution of respondent characteristics for the Puzzle Simulation. Similar to the Video Simulation, a larger portion of respondents were females (61.9%), with all respondents being from grade 5 (100%). The age distribution was primarily 10 years old (73.8%).

Table 3.
Distribution of Pre and Post Characteristics of Video Simulation

Variabel	f	%
Pre test Video		
Good	26	61,9
Not enough	16	38,1
Post test Video		
Good	38	90,5
Not enough	4	9,5

Table 3 shows that the highest distribution of video simulation pre-test characteristics is in the good category with 26 people (61.9%) and the poor category with 16 people (38.1%). Meanwhile, the highest distribution of video simulation post test characteristics was in the good category with 38 people (90.5%) and the poor category with 4 people (9.5%).

Tabel 4.
Distribution of Pre and Post Simuilasi Puizzlei Characteristics

Variabel	f	%
Pre test Puzzle		
Good	26	61,9
Not enough	16	38,1
Post test Puzzle		
Good	42	100,0

Table 4 shows that the distribution of the characteristics of the pre-test puzzle simulation was the highest, namely the good category with 26 people (61.9%) and the poor category with 16 people (38.1%). Meanwhile, the highest distribution of characteristics of the puzzle simulation post test was in the good category, with 42 people (100.0%). It is done uintuik see the difference between variabeil indeipeindeint and variabeil deipeindein. In this study, the Wilcoxon study raised a significant level of $\alpha \leq 0.05$.

Tabel 5.
The influence of simulation methods on flood disaster preparedness SD Inpreis Nipa-Nipa Makassar City 2023

Simulation	f	*Positive Ranks*	*Tieins*	*Neigativei Ranks*	P value
Prei post Video	42	13	29	0	0,000
Pre post tes	42	16	26	0	0,000

Table 5 shows that the results of data processing using the Wilcoxon test and it is known that the significant value of the video simulation p value is 0.000 <0.05 and the value of the puzzle simulation p value is 0.000 <0.05, so it can be stated that there is a significant difference between before and after it was given. video and puzzle simulations. So it can be concluded that there is an influence of video and puzzle simulation methods on flood disaster preparedness at Inpreis Nipa-Nipa Elementary School, Makassar City.

DISCUSSION

The class category as part of the number of respondents in class 6 was 42 people (50.0%) and class 5 was 42 people (50.0%). This is in line with research conducted by Seitiyowati &; Suiprapt (2023) Those who remember Numbers 6 and 5 are the largest number, namely 61 people (43%). Serve based on the categatory of 13 years of videio simulation of 42 reispondein in the beisar of beiruisia 11 years in as many as 30 people (71.4%), and the least of 13 years in which is 1 person (2.4%). This is in line with the research that is carried out by the oleih Seitiyowati &; Suiprapti (2023) Those who remember that the Aged responden 11 years was 65 people (46%). This is in line with research conducted by (Siswi et al., 2023) Those who remember that the Aged responden 11 years as many as 11 people (55%). Based on the age category of the Puzzle simulation. Of the 42 respondents in Large, 10 years old were 31 (73.8%), and the least was 9 and 12 years old (2.4%). This is in line with the research that was carried out by the oleih Husniawati eit al., (2023) The one who found that the Beiruisia reispondein was 10 years in as many as 30 people (66.7%). A person's age does not always determine how much they understand something.

Metode Simulasi video ilas (pre post tes)

The research results showed that the highest distribution of content characteristics of the pre-test simulation video was in the good category with 26 people (61.9%) and the poor category with 16 people (38.1%). Providing a distribution of high post-video simulation characteristics, namely the good category as many as 38 people (90.5%) and as many as 4 people (9.5%). The results of the study can be known the level of preparedness for flood disaster evacuation, all respondents have a very ready level of preparedness. This research is in line with (Saputro et al., 2020) showed that after being given the video, 49 respondents with a ready attitude (100%) and 0 respondents with an unprepared attitude (0%) were obtained.

Metode Puzzle (pre post tesist)

The research results showed that the distribution of the characteristics of the pre-test simulation puzzle content was high, namely the good category with 26 people (61.9%) and the quasi category with 16 people (38.1%). The highest distribution of posttest simulation puzzle characters was in the good category with 42 people (100.0%). Based on research conducted by researchers, the most frequently asked questions are regarding flood disasters and preparedness to face flood disasters. This is in line with research conducted by Jusuf et al., (2023) showing the characteristics of the pre test were 7 students (31.82%) while the post test was 18 students (81.82%) from the results of the pre and post puzzle simulation. The increase in student post test results, which is an indicator of the success of this activity, reached 80%. The crossword puzzle approach is an example of a meaningful learning innovation that emphasizes active learning that

is fun, creative, effective, not boring and can understand the material easily, but does not eliminate the essence of learning, thereby increasing student motivation and learning outcomes.

According to the results of research conducted by (Kholisoh &; Aprilina, 2023) Respondents showed that respondents experienced an increase in activeness and confidence to express opinions on flood disaster preparedness knowledge after grade 5 students were given education Puzzle, respondents said they were happy, enjoyed and wanted to play Puzzle return. Based on previous research conducted by (W. M. L. Putri &; Suparti, 2020), resulting in that educational game Puzzle Disasters can improve disaster mitigation and Puzzle Chosen because this media is a more interesting medium to accommodate information compared to textbooks. Media is very helpful to encourage children to be passionate and more active in teaching.

The Influence of Simulation Methods on Flood Disaster Preparedness at SD Inpres Nipa-Nipa Makassar City.

The results of uji wilcoxon obtained witha p value value = 0.000 < 0.05, it can be implied that the isis hypothesis is envied which means that there is an average difference between pre-test and posttest,so it can be implicated that there is an ingestion Metode simulation ilasi video fifffflood Disaster Preparedness at SD Inpreis Nipa-Nipa Makassar City. Based on the field research while playing the video, the researcher asked about flood disaster preparedness and its causes, but many students still did not know about them. During the video presentation, many students were interested, enthusiastic, and focused on watching the video. This research is consistent with a study by Tiara et al., (2019), which found a significance value of $\rho = 0.000$ with $\alpha = 0.05$ ($\rho < \alpha$), indicating a significant influence before and after health education through animated videos on flood disaster preparedness awareness in the Silabeiranti Residential Area, Lorong Dahlia, Palembang. The animated media method in this research helps people better understand and apply the information provided during health education. This can aid in better information retention among the community.

The media used in this community service are animated videos and disaster simulations. These media were chosen because there are several studies discussing the effectiveness of video and simulation media. Videos are one of the audiovisual media that are quite attractive across various age groups (Haristiani et al., 2022). The Wilcoxon test results with a p-value of 0.000 < 0.05 indicate that the hypothesis is accepted, meaning there is a difference in the average between the pre-test and post-test. Therefore, it can be concluded that there is an influence of the Puzzle Simulation Method on Flood Disaster Preparedness at SD Inpreis Nipa-Nipa, Makassar City.lood preparedness at SD Nipa-Nipa Makassar Cit This research is also consistent with a study conducted by Jusuf et al., (2023) which stated that students' understanding of disaster preparedness increased after learning using crossword puzzles at SMP Negeiri 7 Gorontalo. This is because providing education on disaster preparedness using educational videos and puzzles can enhance disaster preparedness among elementary school students.

Understanding disaster preparedness to face floods in children using SIGANA Banjir educational game media is very effective, this is evidenced in the results of children's understanding before being given educational game media and after being given educational games tested for effectiveness which is carried out using t-tests on the SPSS application that the results show a significance value of < 0.05 which means that there is a positive difference in children's understanding (Ulya & Akbar, 2023).

CONCLUSION

Awareness about flood disaster preparedness before the video simulation was conducted in 26 students (61.9%), and before the puzzle simulation was conducted in 26 students (61.9%) at SD Inpreis Nipa-Nipa. Awareness about flood disaster preparedness increased after the video simulation to 38 students (90.5%) and after the puzzle simulation to 42 students (100.0%) at SD Inpreis Nipa-Nipa. There is an influence of simulation on flood disaster preparedness at SD Inpreis Nipa-Nipa (Wilcoxon Test results from video simulation show p-value 0.000 < 0.05, and p-value 0.000 < 0.05 from puzzle simulation).

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