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The Effect of Disaster Education on The Ability of Adolescents to Recognize COVID-19 Prevention

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ABSTRACT

Disaster education to reduce disaster risk in adolescence is essential. An infectious disease that is currently spreading is covid-19. Emerging epidemiological reports of covid-19 in children show that, while they are less likely to become infected and to have the severe disease than adults, children are vulnerable to the coronavirus pandemic. This research aimed to find out the effect of disaster education on children's ability to recognize Covid-19 prevention. This research design is quasi-experimental with a one-group pretest-posttest design approach. Disaster education intervention Covid-19 covers disaster aspects (prevention, detection, and response phases). The research instrument uses a questionnaire on students' ability to recognize covid-19 prevention. Data analysis using the Wilcoxon test showed p-value of 0.000. There is an effect of providing disaster education on children's ability to recognize covid-19 prevention. The early introduction of disaster or disease outbreaks and their prevention are the concrete means that need to be given to the younger generation to increase the children's knowledge and shape alertness behavior in dealing with the disaster or disease outbreaks.

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1. INTRODUCTION

At the end of 2019, we were surprised by a new emerging infectious disease caused by Coronavirus (Covid-19). Entering the second year of the COVID-19 pandemic, the impact of the pandemic on the health and mental well-being of children and young people continues to worsen (Nugraha, Ernawati, Utama, & Rinjani, 2020). Recent data from UNICEF shows that, globally, at least 1 in 7 children is directly affected by quarantine, while 1.6 billion children are affected by the cessation of teaching and learning. Disruption to routines, education, recreation, and anxiety around family finances and health make many young people feel afraid, angry, and worried about their future (Wylie H, 2021).

Emerging epidemiological reports of Covid-19 in children in China suggest that while being less likely to become infected and have the severe disease than adults, the children are still vulnerable to the coronavirus pandemic. Research published in adolescents showed that children of all ages in Wuhan and surrounding areas are susceptible to the Covid-19 virus, and children died from it (Beusekom, 2020). Among 3,4 million covid 19 deaths reported as 0,4 percent (over 12.000) occur in children and adolescents under 20 years of age (Unicef, 2021). Younger children are more at risk of serious disease than older children. Proportionally, severe and critical cases were 10.6% on children under one year, 7.3% on 1-5 years-old children, 4.2% for 6-10 years-old children, 4.1% on 11-15 years-old children, and 3.0% on 16-18 years-old children (Witte & Fischer, 2020). The study stated that 2,143 pediatric patients were infected with Covid-19. Of the 2,143 cases, 731 (34.1%) were confirmed at the laboratories, and 1,412 (65.9%) were suspected. The average age of the patients was seven years old (ranging from 1 day old to 18 years old); 1,213 (56.6%) were boys (Eastin & Eastin, 2020).

In Jakarta, the epicenter of Covid-19 in Indonesia, more than 170 adolescents under five were categorized as Patients Under Monitoring and People Under Monitoring. While in West Java, the province with the second largest number of Covid-19 cases in Indonesia, more than 40 children up to the age of 10 showed symptoms of Covid-19, which can include fever, cough, and shortness of breath (Unicef, 2021). In more severe cases, the infection can cause pneumonia or difficulty breathing. In February 2020, the President of the Republic of Indonesia announced that there were 2 Indonesian citizens infected with Covid-19, and in March 2020, the Mayor of Surakarta officially determined that the city of Surakarta was a red zone for Extraordinary Events (Kementrian Kesehatan RI, 2020).

A control effort that can be carried out quickly is alertness. The alertness steps taken cannot be separated from the principles of epidemic control, namely the prevention, detection, and response phases (Salasa, Murni, & Emaliyawati, 2017). The government has issued anticipatory policies in the prevention and detection phases, and Other efforts need to be made, such as increasing communication, education, and information related to the virus to not cause panic in the community due to exposure to incorrect information and to build a positive paradigm and public awareness in doing the prevention (Suni, 2020).

Based on Salasa. S, Murni, T.W., & Emaliyawati, E., research (2017) influential aspects of creating a culture of preparedness in the community, including precursor factors, intention formation, and preparation planning. Precursor factors are supported by risk perception, critical awareness, and anxiety, one of them that risk perception results from the internalization of

information about threats and dangers that disasters may cause. In contrast, critical awareness is an awareness that arises against perceived threats marked by how often the individual tries and thinks about the impact of the disaster (Salasa, Murni, & Emaliyawati, 2017).

Disaster education in childhood is the golden period to underlie the life process to become healthy individuals, communities, and nations. Health education for school-age children is the main element in children's education, not only as a health learning process but also for optimizing physical growth and cognitive and emotional potential to underlie their personality and intelligence and the main foundation in further education. Health education for school-age children is influenced by a healthy outlook, development paradigm, health determinant factors, health services, and health education (Unicef, 2020).

The characteristics of challenging teenagers are expected to have good awareness to be ready to face the threat of death due to disasters. Therefore, increasing preparedness by providing disaster education needs to be done to foster a proactive attitude from individuals or communities in disaster management and prevention; besides, it is expected to stimulate ongoing preparedness activities (Suni, 2020). In this way, the problems that have arisen so far, such as the high threat of death, the one-way capacity building program from the government, and the lack of knowledge and ability of people who have been exposed to disaster management, can be solved by the preparedness of the individual or the community, because they have their awareness (Salasa. S, Murni, TW, & Emaliyawati, E., 2017).

Protection of children and educational facilities is essential. Alertness is needed to prevent the possibility of Covid-19 spreading at schools boys (Eastin & Eastin, 2020). However, this must be done carefully not to stigmatize students and staff already infected with this virus. Today, children and adolescents are global citizens, powerful drivers of change, and members of the next generation of nurses, scientists, and doctors (Wylie H, 2021). Every crisis that occurs is an opportunity to help them learn, grow sympathy, and strengthen resilience while building a safer and more caring society (Salasa. S, Murni, TW, & Emaliyawati, E., 2017). Providing information and facts about Covid-19 helps reduce students' fear and worry about the disease and supports their ability to cope with its secondary effects on their lives (Unicef, 2020).

Based on observations made in the field/school, it was found that there has been no disaster or epidemic-based environmental education to reduce disaster risk, especially for children. The children's ability to recognize infectious disease outbreaks is deficient because the Covid-19 outbreak appeared just at the end of 2019. This research aimed to find out the effect of disaster education on children's ability to recognize Covid-19 prevention.

2. RESEARCH METHOD

Research Design

This study is a quantitative study with a quasi-experimental one-group pre-and posttest design to evaluate the effectiveness of disaster education: covid-19 on the ability of the adolescent to recognize covid-19 prevention. This study was conducted from June to November, July to September 2020.

Population and Samples

This study was conducted at SMP N 2 Wonosari, with inclusion criteria, students who have never been exposed to disaster education: covid-19 and are willing to be respondents. A total of 44 students participated in this study. A convenience sample technique was used to select participants.

Intervention

The intervention was delivered to students in a Disaster education intervention. Covid-19 covers disaster aspects (prevention, detection, and response phases) given to students three times for 30 minutes, virtual or online.

Instruments

The research instrument used a questionnaire to obtain information on the age, gender of the respondents and measure the ability of teenagers to recognize the prevention of Covid-19 with the results of measuring the standard deviation of the mean value. The questionnaire has two answer choices, namely "Yes" or "No" The questionnaire consists of 31 statements regarding the meaning, signs, and symptoms, transmission/ spread, and prevention of COVID-19, whose validity has been tested with results of an r value ranging from 0.556-0.913 ($r > 0.444$) and a reliable value of 0.975. Evaluation of Adolescents' ability to recognize covid-19 prevention was measured before and after the intervention via a google form link from each student's email.

Research Procedures

Researchers selected respondents according to inclusion and exclusion criteria, gave informed consent, and explained the purpose and description of the research through a circular form on the Whatsapp group in their class. After reading the information and asking for approval/approval as respondents, they became respondents in the study whose identity was guaranteed to be confidential. Respondents who agreed then asked to fill out a questionnaire to get personal data, pretest via the google form link. Disaster education intervention: Covid-19 through online/virtual. After completing the intervention, students are asked to fill out the questionnaire again to get posttest data.

Data Analysis

Data Analysis using Univariate and A Bivariate Analysis. Univariate Analysis consists of percentage, means, median, standard deviation, and min-max. Bivariate data were analyzed using the Wilcoxon test and IBM SPSS Statistics version 22 for windows with a significance level was set at $p\text{-value} < 0.05$.

Ethics

The Ethics Commission has approved this research of dr. Moewardi General Hospital Number 848/VII/HREC/2020.

3. RESULTS

Each variable is described based on gender, age, and children's ability to recognize Covid-19 prevention as follows:

Univariate Analysis

The respondents consisted of 25 males (57%) and 19 females (43%), and the result of the Analysis shows that the respondents were 10-15 years old, which consisted of mostly 12 years-old respondents (Table 1).

Table 1. Distribution of respondents based on gender and age (n=44)

Variable	Frequency	Percentage
Gender		
Male	25	57
Female	19	43
Age		
10	1	2.3
11	2	4.5
12	31	70.5
13	9	20.5
15	1	2.3

The average ability of children to recognize Covid-19 prevention before the disaster education was 27.05, and after the education, the average was 29.93 (Table 2).

Table 2. Analysis of adolescents' ability to recognize Covid-19 prevention before and after the disaster education (n=44)

Variable	Mean	Media n	Min- Max	SD
Adolescents' ability to recognize covid-19 prevention (Pre test)	27.05	28.00	24-30	1.54
Adolescents' ability to recognize covid-19 prevention (Posttest)	29.93	30.00	28-31	1.02

Bivariate Analysis

Based on the Wilcoxon test analysis results in Table 5, a p-value of 0.000 (p-value < 0.05) is obtained, which means that disaster education: Covid-19 affects children's ability to recognize Covid-19 prevention.

Table 3. Analysis of the effect of disaster education: Covid-19 on adolescents' ability to recognize Covid-19 prevention

Adolescents' ability to recognize covid-19 prevention	N	Mean	Median	SD	95% CI	p-value
Pre	44	27.05	28.00	1.54	25.6-45.84	0.000
Post	44	29.93	30.00	1.02	28.2-48.16	

Bivariate Analysis

Based on the Wilcoxon test analysis results in Table 5, a p-value of 0.000 (p-value < 0.05) is obtained, which means that disaster education: Covid-19 affects children's ability to recognize Covid-19 prevention.

4. DISCUSSION

Based on the Wilcoxon test analysis results, there is an effect of providing disaster education: Covid-19 on children's ability to recognize Covid-19 prevention. Disaster education is a disaster management effort in the element of alertness based on education to increase personal and community knowledge theoretically and practically. Age is a variable of the individual, which basically, the older a person gets, the more mature they become and the more they absorb information that will affect their productivity (Widjanarko & Minnafiah, 2018). In this case, the information is the behavior of alertness in dealing with disasters. The previous study reported that more than half of elementary and junior high school students had good knowledge of disaster alertness (Sari, Milfayetty, & Dirhamsyah, 2014). Another previous study reported that research explained that school-age children have limited abilities and resources to control or prepare themselves when they feel afraid, so they are very dependent on parties other than themselves to recover from disasters (Herdwiyanti, 2013). Children's vulnerability to disasters is triggered by their limited understanding of the risks around them, which results in the absence of alertness in dealing with disasters.

Risk reduction efforts must be carried out by empowering the community to make the response process more effective with a fast response. Adolescents are a very potential group because they have excellent resilience rates. In addition, the growth in the number of adolescents is very rapid compared to other age groups, so that the empowerment of youth groups with contingency planning is expected to increase preparedness against the threat of death so that they can assist vulnerable groups (Salasa et al., 2017).

Unicef Indonesia's experience using the Youth Circle to reduce disaster risk and improve youth response and involvement in collaboration, advocacy, and research shows that youth participation can accelerate program outcomes. Therefore, Unicef Indonesia has developed and facilitated a cross-sectoral strategic approach to integrate youth participation through partnerships with civil society and the government, including preventing covid during the pandemic (Unicef, 2020).

Adolescent preparedness in dealing with the COVID-19 disaster needs to be done early on because various mass media and social media information are accurate, and some are not. Through disaster education, which includes basic information and good covid-19 prevention, teenagers get reliable and capable information in preventing the transmission of covid-19 (Kementrian Kesehatan RI, 2020). In facing natural conditions, such as the current pandemic, both individually and in society, humans must learn to live with nature and need control and prevention efforts to avoid and minimize danger through various technological engineering. However, it would be more appropriate if mitigation started from changes in human behavior itself in dealing with the dangers. Disaster education is necessary because education is considered effective in changing behavior and behavior change tends to be much cheaper and more permanent than technological engineering

alone. Therefore, strategic steps are needed to 1) Reorganize a clear, structured, and systematic disaster education system, 2) Rearrange clear and firm roles between ministries and institutions related to the disaster, 3) Restructure the disaster curriculum (disaster curriculum), and 4) Conducting socialization and education about a structured, consistent and sustainable disaster education system and curriculum (Tahmidaten & Krismanto, 2019).

Disaster education in the learning process can generate new desires and interests, generate motivation, provide stimulation for learning activities, and positively affect children when supported with good media. Education can attract children's interest and help them concentrate on the learning process and understand the material (Tahmidaten & Krismanto, 2019). The previous study reported that the message could be conveyed through visual communication symbols. In disaster education, the media can excite and generate motivation and interest in students to actively participate and interact in the learning process (Wasliyah, 2018). Disaster education is an awareness-building process that builds knowledge, understanding, and actions that promote preparedness, prevention, and recovery. In this case, risk education refers to a process that starts from building knowledge about the environment, understanding natural phenomena and their risks, to taking into account actions and behavior in a disaster emergency. Therefore, risk education is a process of socialization, understanding science (natural phenomena), and developing skills towards safety, which is accompanied by building awareness of disasters (Tahmidaten & Krismanto, 2019).

Studies on the use of children's disaster education to mitigate disasters suggest that it can be given to early childhood and adolescence. The previous study reported that disaster mitigation education could be done by understanding the text's content, responses to disaster problems, the prevention, and writing down natural and social disaster phenomena in the community based on the reading text (Liliani, 2010). Adolescents with mild anxiety usually have a better level of knowledge regarding the COVID-19 pandemic, have good relationships with the environment and family, have good coping, and have a good level of religiosity (Ruskandi, 2021). The function of disaster education is to develop all aspects of the personality and potential of children in order to create a society that is responsive and prepared for disasters.

5. CONCLUSIONS

Conclusion: there is an effect of providing disaster education: Covid-19 on adolescents' ability to recognize Covid-19 prevention. Disaster education can be mitigation in handling the COVID-19 pandemic disaster. The results of this research are expected to increase knowledge and awareness of alert behavior in dealing with disasters. It can provide information and knowledge related to disaster risk reduction that can be implemented in disaster alert schools.

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