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Is psychological preparedness for potential disaster difference between gender among university students

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Abstract. Indonesia geographical condition has made the country prone to disaster. The National Disaster Mitigation Agency (BNPB) reported that there are 1.549 disasters happen in the first half of this year. One of global disaster that not only affect Indonesia but also country all around the globe is Covid-19 pandemi. The impact of the pandemi is not only experienced by highly developed world but also under developed world including Indonesia. Disaster in any form has bring a significant impact on individual mental health especially to the survivor. Study found that one of the factor that could reduce the psychological impact of disaster is psychological preparedness for disaster. It is also state in the previous study that gender has play a role individual psychological preparedness. Although there had been several findings in psychological preparedness for disaster, however gender difference in psychological preparedness in the context of university students is still remain in question. Therefore, aim of this research is to investigate gender difference in psychological preparedness of university students. The study was conducted in Surabaya. Survey research was applied using a Psychological Preparedness for Potential Disaster scale as a mean to identify the psychological preparedness of the participants.

1. Introduction

Covid-19 pandemic were global disaster that influence all of people around the world. The impact of the pandemic is experienced not only by highly developed world but also under developed world such as Indonesia. The number of covid-19 confirmed cases and death has been increasing although it has been also noticed that the recovery rate were also increase. It is recorded that up until 10th September 2020 the number of people that are infected by the virus are 28.056.120 people all around the world [1]. Worldometer [1] also note that the death caused by the covid-19 infection are 90.865. However, we still need to pay attention on the number of people infected that were increase in a matter of day around the globe including in Indonesia.

The number of covid-19 confirmed case in Indonesia to date has shown a significant increase from the day it was announced by the Government of Indonesian March 2020. In August, it was recorded that the confirmed cases was 174.796 person and the death rate was 125.959 person [2]. In a one month period since August 2020, the number of both the confirmed cases and death were growing significantly



up to about 80% on september with 207.203 confirmed cases and 8.456 of death [2]. The increase were alarming and made the Government of Indonesia decided to reactivate the lock down policy.

Its is reported that strategy implied by the government to reduce and stop the spread of covid-19 has brought several psychological problems to emerge. The policy that applied to decrease the span of the disease has casuse several psychological issues to appear to not only children but also teenage, adult, and elderly. Psychological problems such as negative psychological effects including post-traumatic stress symptoms, confusion, and anger were identified emerge during or after disaster events [3]–[5]. Children reported to experience restlessness, irritability, anxiety, clinginess and inattention as a result of being exposed to a disaster event [4]. College students were also found to be affected by the pandemic situation. Study found that college students were experience increased negative affect, anxiety, and depression [6]. The negative impact of this covid-19 pandemic disaster could also seen month or years after the disaster [4], [7], [8]. Therefore, it is important to prepare the community especially the university students to cope with the situation.

Although the fact that the the vaccine is underway, nevertheless its still could not reduce the psychological impact of the pandemic. Several study also found that the psychological impact of the pandemic could be seen months or even years from now [4]. Research found that helping individual to successfully manage a disaster situation or disaster impact and to cope with psychological problem could help them to reduce the psychological impact that they experienced [9]. Study suggest that psychologically preparing individuals for a disaster could potentially decrease the psychological impact of disasters [10]. Preparing the individual to face the disaster could foster resilience in the long term [10].

Studies on the disaster preparedness has found that demographic variable become an importat factors in disaster preparedness [11]–[14]. Research on the role of income in the disaster preparedness has found that were the most suffered from disaster [11], [13]. Other studies also tried to investigate ties between age [15] and years of education [16] with disaster preparedness. Beside of that, study also conducted to identify how gender could influence disaster preparedness [17]–[19]. However, to date the relationship between gender and psychological preparedness for potential disaster has not been explored yet. Therefore aimed of this research is to investigate the role of gender in psychological preparedness for potential disaster in response to covid-19 pandemic amongst university students.

2. Methods

The participants involved in this study was 383 university students in Surabaya. All respondents should complete Psychological Preparedness for Potential Disaster scale that are developed by the author which consist of three parts which are informed consent, identity, and the question or statement.

First part of this scale was provided to record the participant's informed consent. The second part is a parts where participants fill their identity which includes: age, gender, education background, job, and socioeconomic status. The third part is the Psychological Preparedness for Potential Disaster scale 1.0. This scale consist of 71 items version which include 35 items of affective dimension, 13 items of behaviour dimension, and 23 items of cognitive dimension. The internal consistency of the scale is a = 0.796.

A chi-square test was used to determine the gender difference in psychological preparedness of university students. P-value less than 0.005 were considered to be statistically significant, and all the analyses above were carried out by using the Statistical Package for Social Science for Windows (SPSS, version 26.0, IBM, Armonk, New York, USA).

3. Results

3.1 Demographic profile

The university students participate in this study were 383. The participants in this study consist of 79% and 21 % male. There are only two categories that count in this study, which are teenage (12-25 years old) and adult (26-35 years old). The teenage groups were 99% out of the total population, while the

adults were only 1% out of the total population. In regard with the socioeconomic status, participant demographic profile in this study shows that the level of psychological preparedness of vast majority of the respondents in this study were in average level (90%) and 10 % were distributed to high and low category (Table 2). All of the respondent involved in this study were undergraduate students live in Surabaya. Most of the respondents were female (80%) with age group range between 17 years old until 33 years old. The socio economic status of the subject in this study were mostly in low income category (57%). While the middle income group and high income group were only 23% and 20% respectively. The summary of the demographic profile of the participants in this study could be found in the table below (Table 1).

Table 1. Demographic profile

Characteristic	f	%
Age group (years)		
Teenage (12-25 yo)	378	99
Early Adult (26-35 yo)	5	1
Gender		
Female	306	79
Male	77	21
Socioeconomic status		
Low income (IDR 1.000.000- 5.000.000)	219	57
Middle income (IDR 5.000.000-10.000.000)	89	23
High Income (>IDR 10.000.000)	75	20

3.2 Psychological preparedness level

The descriptive analysis of the data shows that psychological preparedness for potential disaster variables were range between of 43 to 60. This is shows that the lowest value is 43 and the highest value is 60. The average value of psychological preparedness for potential disaster is 51.49 (Table 2).

Table 2. Descriptive variable based on score

Psychological preparedness for potential disaster	
Total	383
Range	43-60
Mean \pm SD	51.49 \pm 3.56

The categorization of the psychological preparedness fo potential disaster were based on the values of each of the participants data and it is categorized in three group namely high, average, and low. Data were classified as high if the value is greater than mean + SD, average if the value is between mean – SD and mean + SD, and low if the value is less than mean + SD.

Table 3. Psychological preparedness for potential disaster level based on norms

Psychological preparedness for potential disaster level	f	%
High	52	14
Average	292	76
Low	39	10

The majority of the participants were in average level of psychological preparedness for potential disaster (76%). While high and low level of psychological preparedness for potential disaster were 14% and 10% respectively.

3.3 Psychological preparedness level based on gender

The vast majority of the participants in this study were female (79%). The majority of the female participants were having an average level of psychological preparedness for disasters with 61% of the total populations. Low and high level of psychological preparedness for potential disaster among female participants were recorded only 12% and 7% of the total population respectively. We could see from table 4 that male participants were mostly have average level of psychological preparedness for potential disaster with 15% of the total population. While there is only a few number of male that are in high (3%) and low level of psychological preparedness for disaster (2%). The summary of level of psychological preparedness based on gender could be found in table 3.

Table 4. Psychological preparedness level based on gender

Psychological Preparedness level	Gender	f	%
High	Male	12	3
	Female	27	7
Average	Male	58	15
	Female	234	61
Low	Male	7	2
	Female	45	12

3.4 Gender and psychological preparedness level

The objective of this study was to examine the relationship between gender and psychological preparedness for potential disaster. A Pearson's Chi-Squared test was carried out to assess whether gender and psychological preparedness for potential disaster were related. From the analysis, it was found that There was no association between gender and psychological preparedness for potential disaster, ($\chi^2(2) = 4.201$, $p < 0.05$). The summary of the hypothesis testing could be seen in table 4.

Table 4. Correlations between gender and psychological preparedness for potential disaster

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	4.201 ^a	2	.122
N of Valid Cases	383		

4. Discussions

From the analysis we could see that first, the psychological preparedness for potential disaster of the majority of the university students were in average level.

Males and Females equally were in average level of psychologically prepared for potential disaster. meaning that most of them were not feeling anger with the disaster, have sufficient knowledge of the disaster, and try to anticipate the disaster by preparing the basic things such as food and medicine that might help them to survive from disaster.

The finding is that psychological preparedness for potential disaster among university students was not affected by gender. This is inline with previous study that conducted by Morrissey and Resser in their study on the effectiveness of psychological preparedness advice in community cyclone preparedness materials. In this study they conclude that the demographic variables explored in there study including gender were not significantly related with psychological preparedness [20].

Research in the field of disaster preparedness conducted by Najafi and colleagues on demographic determinants of disaster preparedness behavior among Iranian also found that the relationship between gender and disaster preparedness behavior was insignificant [11]. This is due to an equality between men and women in making disaster preparedness decision. This also become the case in Indonesia where both of male and female were involved in mitigation and preparedness activities although in the case of women, the activities were centered inside the house.

5. Conclusion

In summary, the result shows that the psychological preparedness for potential disaster is not related to gender. This is due to an equality between male and female in making decision related to disaster preparedness of the participants. However, further research on psychological preparedness for disaster among university students should be elaborated further using qualitative research method in order to have deep understanding on the cause of insignificant different between gender and psychological preparedness for potential disaster as well as other determinants.

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