Socio-Demographic Factors Are Related to Family Preparedness in Facing Disasters

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ARTICLE INFO	ABSTRACT
    Corresponding author e-mail addiartowidya@gmail.com	*Disasters such as floods, earthquakes, and pandemics have been shown to affect the quality of life, mental health, and economic sustainability of affected communities. In response to these disasters, individuals are expected to prepare themselves and their families for the worst risks that can occur at any time. Currently, family preparedness is very important to be grown in social life. The purpose of this research is to describe the relationship between socio-demographic factors associated with family preparedness in urban disaster-prone areas in Probolinggo District. The research design used was descriptive analytic research design with a cross-sectional approach. The sample was selected using purposive sampling technique with a sample of 122 respondents. Furthermore, respondents will be given a questionnaire to determine or identify family preparedness variables. After that, the data was collected and processed with the help of SPSS 23 for windows using bivariate tests on each variable to determine its relationship with family preparedness. From the results of the bivariate test using Spearman rank, there is a significant relationship between socio-demographic factors and family preparedness including: gender (p=0.000), education (p=0.000), occupation (p=0.000), and knowledge with (p=0.015). Meanwhile, the variables of age (p=0.808) and social support (p=0.195) have no correlation with family preparedness (p value > 0.05). These results indicate that it is important to improve family preparedness by correcting deficiencies in several factors that do not have a significant relationship from the research results*

1. INTRODUCTION

Indonesia is one of the countries that is very vulnerable to natural disasters. Extreme geographical, geological and climatic conditions make Indonesia often experience various kinds of disasters, such as earthquakes, tsunamis, volcanic eruptions, floods, landslides, and forest fires (Yong & Lemyre, 2019). The high frequency of disasters is closely related to Indonesia's location between three major tectonic plates, which are the Indo-Australian plate, the Eurasian plate, and the Pacific plate, as well as within the Pacific Ring of Fire. In addition, climate change and environmental degradation also exacerbate disaster risks in Indonesia and other vulnerable areas (Evie & Hasni, 2022). Apart from that, climate change and environmental degradation also weaken the risk of disasters in Indonesia and other vulnerable areas, one of which is flood disasters

Natural disasters have a significant impact on people, both directly and indirectly, through various forms of infrastructure damage, loss of life, and profound psychological impact (Pramono, 2016; Addiarto & Yunita, 2019). Disasters such as floods, earthquakes and pandemics have been shown to affect the quality of life, mental health and economic sustainability of affected communities. In response to these events, individuals are expected to prepare themselves and their families for the worst risks that can occur at any time (Bonfanti et al., 2024). Nowadays, family preparedness is very important to grow in social life. Family Preparedness not only focuses on individual readiness, but also involves every family member in the process of planning, decision-making, and implementation of preventive measures to emergency response because each family member has a different role in an emergency situation, and coordination between members is very important (Sari, 2021).

There is no research data or information on how the process of implementing family preparedness is carried out in various regions in Indonesia. Most of the research results mention that family preparedness in some disaster-prone areas is still low so that it needs improvement from various aspects (Evie & Hasni, 2022). The program involves several aspects, such as education on disaster mitigation, preparation of family evacuation plans, preparation of emergency equipment, provision of basic needs, and understanding of safety procedures to providing easy access to information (Addiarto & Yunita, 2019b). This step is important to improve the adaptability and resilience of families in dealing with various emergency situations. In addition, family preparedness in the face of disasters is needed to minimize the impact caused by disasters such as property loss, trauma, or casualties, especially in vulnerable groups including children and the elderly and can reduce panic and confusion when a disaster occurs (Kim & Kim, 2022).

Furthermore, to implement family preparedness requires the cooperation of all family members, adequate knowledge, and skills in dealing with emergency situations so that with a holistic and disciplined approach, family preparedness is expected to become a culture that is instilled in families, so that they are able to survive and rise more quickly from the crisis situations faced and have the ability to respond well based on accurate and accessible information. Other research according to Supriandi (2020) stated that disaster preparedness education programs integrated with local communities have been shown to be more effective in improving preparedness than individual efforts, due to mutual support and knowledge exchange. Careful planning and regular drills among family members are believed to increase

effectiveness when dealing with actual emergencies, minimize risks and speed up recovery after disasters (Sasmito & Prawito, 2023).

Previous studies have suggested that family preparedness is influenced by socio-demographic factors including: knowledge, social support, employment, education, age, and gender (Kim & Kim, 2022; Green et al., 2021). The results of the preliminary research conducted by researchers using the interview method in December 2024 obtained data that 6 out of 10 families stated that thsey still did not have knowledge related to disaster management mechanisms that must be carried out if at any time it occurs. Some also stated that they had never participated in disaster training before. From these various factors, researchers will conduct further research on what determinants affect family disaster preparedness in disaster-prone urban environments.

2. METHODS

2.1 Research design

This research uses a Quantitative design of the Cross Sectional Analytical Descriptive method, where the implementation will be carried out by distributing questionnaires to identify all variables with family preparedness.

2.2 Setting and Sample/Participants

The research conducted in the Disaster-Prone Area of Dringu Subdistrict, Probolinggo Regency from January 20 to February 11, 2025. The sample in this research consisted of 122 respondents selected using purposive sampling technique with inclusion criteria: 1). Respondents live in disaster-prone areas, 2). Able to read and write, 3). Willing to be a research respondent.

2.3 Measurement and Data Collection

Data collection in this research used a questionnaire using a Likert scale (1-4) to measure respondents' socio-demographic data (age, gender, education, occupation, knowledge and social support) and the level of family preparedness. The questionnaire in this research was adopted from home-based disaster preparedness and the Family Adaptability and Cohesion Evaluation Scales by (Jung et al., 2020). The questionnaire has been tested for validity and reliability with 9 samples of respondents outside the research respondents used in this research. The reliability test value for this research instrument is 0.833, and the average validity test value of the instrument is greater than 0.555

2.5 Data analysis

Based on the research data that has been collected, univariate analysis is then carried out using frequency distribution. Furthermore, bivariate analysis was carried out on all factors using the Spearman Rank statistical test. because the data being analyzed was ordinal and did not meet the assumption of normality required for parametric tests. Spearman's Rank correlation is a non-parametric method that measures the strength and direction of association between two ranked variables, making it suitable for this research to assess the

relationship between socio-demographic factors and family preparedness. Statistical data analysis was carried out using SPSS 23 computer assistance.

2.6 Ethical considerations

The researchers have obtained approval to pass an ethical test from the Health Research Ethics Commission (KEPK) at the University of Hafshawaty Probolinggo with the number KEPK/256/UNHASA/XII/2024. The ethical principle adopted by this research is to protect the privacy and confidentiality of respondents. Therefore, researchers respect the right of respondents to agree or refuse to participate in the research. Furthermore, researchers explain the benefits of research, research objectives, and procedures. This research is voluntary and without coercion. Respondents were asked to sign a consent letter if they were willing to participate in the data collection process during the research.

3. RESULTS

Univariate Analysis of Socio-Demographic Factors of Research Respondents

Table 1. Overview of Socio-Demographic Factors of Research Respondents

Variables	f	%
Gender		
Men	45	37
Women	77	63
Age		
< 19 y.o	39	32
20 - 30 y.o	24	20
40 - 50 y.o	48	23
> 50 y.o	31	25
Education		
Elementary	21	17
Junior high	37	30
Senior high	46	38
College	18	15
Occupation		
Civil Servant	28	23
Private	21	17
Self-employed	41	34
Other: Farmer, Husbandry	32	26
Knowledge		
Good	33	27
Fair	66	54
Low	23	19
Social Support		
Good	50	41
Fair	52	43

Low	20	16
Family Preparedness		
Good	13	11
Fair	35	29
Low	74	60

On table 1, it can be seen the frequency distribution of each research variable including: 1) gender dominated by women (63%), 2) the age of the majority of respondents is less than 19 years old (32%), 3) high school education on average (38%), 4) the majority of respondents' jobs are self-employed (34%), 5) the level of knowledge is quite good (54%), 6) social support in the category is quite good (43%) and 7) family preparedness in the category of less (60%).

Bivariate Analysis of Socio-Demographic Factors of Research Respondents with Family Preparedness

Table 2. Cross Tabulation and Bivariate Analysis of Independent Variables with Family Preparedness Variables

| Variables | Family Preparedness | | | p-value | OR |
	Good	Fair	Low		
Age					
< 19 y.o	2	5	22		
20 - 30 y.o	3	16	5	0.808	-0.022
40 - 50 y.o	6	11	11		
> 50 y.o	2	3	26		
Gender					
Men	10	31	4	0.000[*]	0.776
Women	3	4	70		
Education					
Elementary	2	2	17		
Junior high	1	11	25	0.000[*]	-0.379
Senior high	2	13	31		
College	8	9	1		
Occupation					
Civil Servant	7	17	4		
Private	1	8	12		
Self-employed	2	8	31	0.000[*]	0.478
Other: Farmer, Husbandry	3	2	27		
Social Support					
Good	6	21	23		
Fair	4	6	42	0.195	0.118
Low	3	8	9		

Variables	Family Preparedness			p-value	OR
	Good	Fair	Low		
Knowledge					
Good	6	19	8		
Fair	7	2	57	0.015[*]	0.219
Low	0	14	9		

Table 2 shows the results of bivariate analysis of all independent variables with the dependent variable (family preparedness). From the results of the bivariate test using Spearman rank, there is a significant relationship between socio-demographic factors and family preparedness, including: gender (p=0.000), education (p=0.000), occupation (p=0.000), and knowledge with (=0.015). Meanwhile, the variables of age (p=0.808) and social support (p=0.195) have no correlation with family preparedness (p value > 0.05).

4. DISCUSSION

Correlation between Respondents' Age and *Family Preparedness*

In the research results (table 1), it was stated that the majority of respondents in this research were adults (40-50 years old). While in table 2 it is mentioned that age does not have a close relationship with family preparedness in disasters this is because age shows how individuals respond, understand, and act in dealing with emergency situations. Mature age is more likely to have better physical abilities and can more easily move in rapid evacuation or in disaster situations that require physical movement, including in disaster preparedness at least in his family if at any time a disaster occurs (Indahsah et al., 2022). In contrast, the elderly or children may need additional assistance in mobility and protection when assessed from a physical perspective due to age. Whereas actually with the existence of disaster education from an early age, information and information media that is increasingly fast and easily accessible makes age no longer the only factor that is closely related to disaster preparedness. It could be that younger people are more capable of being sensitive to disasters than older people because they diligently access information from social media about disasters through TV, cellphones, and the internet (Davarani et al., 2023). With the ease of quick access to various social media platforms, the younger generation can immediately get the latest information about disasters occurring in various places. This allows them to be more prepared and responsive in facing potential disasters, whether in the form of evacuation, logistical preparation, or providing assistance to those affected.

Correlation between Respondents' Gender and Family Preparedness

From the results of the research mentioned in table 1 shows the number of male respondents who participated in this research was less than women, namely 37% of the total respondents. However, table 2 states that men have better disaster preparedness skills than women. One reason men may have better disaster preparedness skills than women could be due to traditional gender roles, where men are often seen as primary decision-makers or protectors in times of crisis. This can lead to men being more actively involved in preparing for disasters. Additionally, men may have more access to resources, training, or information

related to disaster preparedness, while women might face barriers such as time constraints, caregiving responsibilities, or lower levels of awareness about disaster preparedness. However, it is important to note that gender roles are shifting, and with proper education and support, both men and women can enhance their preparedness skills.

This result suggests that men are often seen as the breadwinners or protectors of the family. In addition, in some communities, men are more likely to receive training or experience related to disaster preparedness and management, such as through military training or involvement in activities that involve physicality and engineering (for example, sports or field work) (Ningsih et al., 2023). In contrast, women may be more often involved in domestic duties and family roles, which emphasize disaster preparedness less (Nababan et al., 2024). Therefore, they are more likely to be given leadership roles in emergency situations, such as natural disasters. This social role may motivate men to be more prepared and active in disaster preparation than women. Whereas women, especially in rural areas or developing countries, are more often dependent on social structures and support to deal with disasters (Yasin & Chaerani, 2024). While men may be more inclined to seek independent solutions, women may face more barriers to accessing information or resources needed for disaster preparedness. In addition, women often have greater responsibilities in terms of nurturing and caring for the family. In disaster situations, these responsibilities can be a barrier to focusing on individual preparedness as they think more about the safety of family members and children. This can make them feel less prepared or less engaged in broader preparedness activities. Disaster preparedness activities are essential to ensure that individuals and families can respond effectively in emergencies. These activities include creating an emergency plan, assembling a disaster supply kit, and identifying evacuation routes. For families with children, special considerations may include having extra supplies like diapers, formula, or medications, and discussing how to communicate during a disaster. Engaging in preparedness activities not only helps individuals feel more secure but also ensures that their loved ones, especially children, are taken care of in the event of an emergency.

Correlation between Education and Family Preparedness

From the research results mentioned in table 1, it shows that the number of respondents who participated in this research was mostly high school graduates, 38% of the total respondents. However, in table 2 it is mentioned that high school education is one of the education levels that shows less preparedness followed by junior high school and elementary school education. This contradicts the theory that education should help people to understand the types of disasters that may occur in their area, as well as the impacts and ways of prevention or mitigation that can be done. The higher a person's level of education, the greater their ability to recognize risks and assess potential threats (Gumelar et al., 2020).

Furthermore, through education, people can more easily access information related to disaster preparedness, such as evacuation procedures, the use of first aid kits, and the important role of communication during a disaster. Formal and informal education can reduce the incomprehension that often causes anxiety or confusion during disasters. Educated individuals tend to be more capable of taking appropriate and quick action when

a disaster occurs (Addiarto & Yunita, 2019b). They are more likely to follow instructions from authorities and evacuate or rescue more effectively. Education can thus inspire individuals to disseminate important information to others and increase the overall vigilance of the community.

Correlation between Respondents' Occupation and Family Preparedness

From the research results mentioned in table 1, it shows that the number of respondents who participated in this research was mostly self-employed, namely 34% of the total respondents. However, in table 2 it is mentioned that civil servants are the ones who show the best preparedness among other types of work. As in the research results, it is mentioned that individuals who work in sectors that are directly related to disasters, such as medical personnel, rescue workers, fire officers, or workers in disaster management agencies, tend to have more in-depth knowledge of disaster preparedness and response procedures. They may be better prepared and better trained to deal with disasters (Ahmad et al., 2018).

Furthermore, people working in the education sector or humanitarian organizations, for example, are also more likely to be exposed to information on disaster preparedness and be able to implement that knowledge in their personal and family lives. Jobs with flexible working hours or that allow one to work from home can influence the extent to which individuals or families have time to prepare. Conversely, jobs with tight working hours or that require one to be out of home (e.g., field work) may reduce opportunities to participate in preparedness activities or involve family members in preparations (Jung et al., 2020).

The next reason is that one's occupation affects income levels and access to resources needed to prepare for disasters, such as emergency supplies (e.g. food supplies, medicine, shelter). Families with higher incomes may be better able to afford emergency supplies, attend preparedness trainings, or have reserve funds for emergency situations. Thus, work influences family disaster preparedness in very diverse ways, ranging from direct influences in terms of knowledge, access to resources and time, to indirect influences related to policies and social structures in the workplace (Evie & Hasni, 2022). Therefore, to improve overall family disaster preparedness, there needs to be attention to more inclusive work policies and support from the employment sector to ensure that all individuals, regardless of their type of work, have equal opportunities to prepare themselves and their families to face potential disasters.

Correlation between Respondents' Knowledge and Family Preparedness

In this research, it was found that the average respondent with high school education was 38% (table 1), followed by junior high school 30%. However, when viewed in (table 1) the average knowledge of family preparedness is 54% (table 2). This is likely due to the implementation of research in urban environments, respondents already have sufficient knowledge with massive information about disasters so that even with a secondary education level can have sufficient knowledge. Education can instill an attitude of vigilance and preparedness from an early age. Through formal and non-formal education, people can be taught to be responsive and not panic when a disaster occurs, and how to work together

in emergency situations. In addition, education can provide individuals and communities with knowledge about the types of disasters that may occur, early warning signs, and steps to take before, during and after a disaster (Huriani et al., 2021).

By increasing the knowledge, individuals and families can prepare proper prevention or mitigation measures, such as choosing a safe place in the house, having emergency equipment, or knowing the evacuation routes so that they are more prepared in the face of disasters. Respondents who are educated about disaster preparedness will be more vigilant and not underestimate the possibility of a disaster occurring. They are more likely to pay attention to early warning signs, follow information from the government or related institutions, and take precautions to protect their families. Therefore, the more knowledge the respondents gain about family preparedness, the more likely the families are to continuously update and improve their preparedness plans. This creates a culture of continuous preparedness that increases the family's resilience to disasters (Evie & Hasni, 2022). This also encourages families to be more proactive in seeking information related to disasters, as well as utilizing existing resources to strengthen their preparedness. With increasing understanding, families will not only focus on reactive actions when a disaster occurs, but also plan preventive steps that can reduce the risk and impact of future disasters. Continuously updated preparedness will ensure families are better prepared to face the challenges that may arise during a disaster, thereby increasing their resilience in the long term.

Correlation between Respondents' Social Support and Family Preparedness

In this research, the results showed that social support (table 1) showed in the moderate category 43% then followed by the good category with 41%. This data shows that the support to families in facing disasters is quite good in the Dringu Probolinggo area. However, social support is not significantly related to family preparedness. This contradicts the theory that one of the factors associated with family preparedness is social support. In general, social support is an important factor affecting the preparedness of a person or community in the face of disaster. When individuals feel supported by their social environment, be it family, friends or community, they tend to be better prepared for emergency situations. However, the relationship between the two is complex and influenced by a variety of factors that can either strengthen or weaken both (Saefullah et al., 2018).

Strong social support can improve family preparedness as family members feel safer and more motivated to prepare. For example, support from friends or family who are more experienced in dealing with disasters can help other families make better decisions about evacuation or sheltering. Good social support, such as having a trusted person to talk to or share emotional burdens with, can help reduce anxiety and stress that often hinder rational decision-making. Therefore, better communication between family members on what to do in the event of a disaster can enable families to get timely and relevant information on the disaster risks they may encounter (Sasmito, & Prawito, 2023).

Social support is not only emotional, but also material. For example, neighbors or friends providing shelter, food or emergency items can be part of a family's preparedness. In addition, involvement in a community that has shared preparedness can also increase a

family's ability to survive an emergency situation. The results of this research indicate that social support is not significantly related to family preparedness, possibly because other confounding factors are stronger so that the strength of social support does not appear significant in respondents (Davarani et al., 2023). This may be due to factors such as individual knowledge, access to resources, or work-related conditions, which have a more direct impact on family preparedness. As a result, social support, although important, may not play as prominent a role in shaping family preparedness in this particular context. Further research is needed to explore the potential influence of other variables and the interplay between social support and other factors in disaster preparedness. Even though bivariate analysis has been carried out, there may still be other unidentified or uncontrolled factors that influence the relationship between the variables studied, such as government policies, economic conditions, or local cultural influences that may be more dominant.

5. CONCLUSION

From the results of the research, it was found that several socio-demographic factors had a significant relationship with family preparedness including: gender ($p=0.000$), education ($p=0.000$), occupation ($p=0.000$), and knowledge with ($p=0.015$). Meanwhile, the variables of age ($p=0.808$) and social support ($p=0.195$) had no correlation with family preparedness (p value > 0.05). These results indicate that it is important to improve family preparedness by fixing deficiencies in several factors that do not have a significant relationship from the results of the research, so that there is a need for education, training and family empowerment in terms of preparing for disaster preparedness.

6. ACKNOWLEDGMENTS

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