



Description of families affected by fire disaster in Jayapura city area

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ABSTRACT

Fire disasters are always unpredictable and unpredictable. Fires often cause various undesirable consequences both concerning material losses, business activities, environmental damage, and pose a threat to the safety of human life. Fires can cause life-threatening impacts and material and social losses, so this shows the need for increased vigilance in fire prevention. The causes of fires in Jayapura City can be caused by natural and non-natural factors. The purpose of this study was to determine the description of families affected by fire disasters in Jayapura City. This type of research is survey research. With the approach used in this research is descriptive quantitative. The population in this study were 73 respondents (KK) affected by fire disasters in Jayapura City in 2022 and a sample of 73 samples with accidental sampling technique. Data were obtained using a questionnaire and analysed using univariate analysis. The results of univariate analysis showed the characteristics of respondents who were male (64.4%), aged <40 years (57.5%), high school education (SMA) (47.9%). The results of the study according to the variables of knowledge level, experience and preparedness were less knowledgeable as many as 24 respondents (32.9%), had less experience as many as 54 respondents (74.0%), and less preparedness as many as 48 respondents (65.8%).

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1. Introduction

Fire is an undesirable event, because it can cause losses, both in the form of material and moral (Heryati, 2020; Vallientinus & Ferdiansyah, 2018). When a fire occurs, the fire arises as a chain process reaction between combustible materials (fuel), oxygen and heat (heat) which is often called the fire triangle (Amrullah, n.d.; Setyadi, 2016; Setyadi & Nanda, 2017). The series of oxidation processes continues, until one of the fire-forming elements ends. To prevent fire, one of these components must be avoided / disconnected (Jayati & Ani, 2020; Styaningsih & Romas, 2023).

Fires can cause life-threatening impacts and material and social losses, so this shows the need for increased vigilance in preventing fires (Susanto & Wahyuni, 2021; Wekke, 2021). One of the prevention efforts that can be done is through improved management (Ilmansyah et al., 2020; Wicaksono & Putrajaya, 2020). This is in accordance with what Birds (1967) stated that efforts to prevent a series of events/accidents can be successful by starting to improve occupational safety and health management (Megantari, 2023; Sultan, 2023; Widodo, 2021). This fire prevention effort will require a fire safety management system (Kodur et al., 2020; Supriadi & Oswari, 2020).

Preparedness is part of the disaster management process that is currently developing, the importance of preparedness efforts is one of the important elements of proactive disaster risk reduction prevention activities before a disaster occurs (Seddiky et al., 2020; Shah et al., 2020; Triastari et al., 2021). Fire incidents can occur at any time and anywhere (LIPI and UNESCO, 2006). The cause of fires in Jayapura City can be caused by natural and non-natural factors (natural disaster or man-made disaster). According to data from the Jayapura City Fire Department (Damkar) report in 2022, there were 2 cases of fire in vehicles (short circuit in the engine), 26 cases of housing (due to electrical short circuit), 6 cases of forest and land (plantation land clearing), 5 cases of business premises (due to electrical short circuit), 1 case of landfill fire (burning garbage is not in order, causing flammable waste to unite so that the fire gets bigger), 1 case of kindergarten school (due to electrical short circuit), and 1 case of student dormitory (due to electrical short circuit) (Jayapura City Fire Department, 2022).

Fire is an undesirable event, because it can cause losses, both in the form of material and moral. When a fire occurs, the fire arises as a chain process reaction between combustible materials (fuel), oxygen and heat (heat) which is often called the fire triangle. The series of oxidation processes continues, until one of the fire-forming elements ends. To prevent fire, one of these components must be avoided / disconnected.

2. Methods

This type of research is survey research (Pawar, 2020). The approach used in this research is descriptive quantitative (Bloomfield & Fisher, 2019). Researchers describe quantitatively (numbers) the trends, behaviours, or opinions of a population by examining a sample of the population (Creswell, 2010: 216). This research attempts to analyse and describe the description of families affected by fire disasters in Jayapura City. Population is the entire element/subject of the research being studied (Hasmi, 2022). The population in this study were 73 respondents (KK) affected by fire disasters in Jayapura City in 2022. The sample in this study was the total population, namely the people of Jayapura City who were affected by the fire disaster as many as 73 respondents (KK).

The sampling technique used was accidental sampling because researchers distributed questionnaires to the people of Jayapura City. According to (Sugiyono, 2016) Incidental Sampling / Accidental Sampling is a sampling technique based on chance, that is, any patient who happens to meet the researcher can be used as a sample, if it is considered that the person who happened to be met is suitable as a data source. The analysis used in this study is univariate analysis, which is to describe the characteristics of respondents, level of knowledge, experience and preparedness.

3. Result and Discussion

This research was conducted in the Jayapura City area. The results of the research that has been carried out are then described with the data that has been collected as many as 73 heads of families. The data obtained includes the characteristics of respondents, level of knowledge, experience and preparedness. The data from the study were then analysed univariately and presented in tabular form as follows:

Table 1.
Distribution of respondent characteristics based on gender, age, and education in jayapura city area in 2023

No	Characteristics of respondents	n	%
1.	Gender		

No	Characteristics of respondents	n	%
	Male	47	64,4%
	Female	26	35,6%
2.	Age		
	<40 Year old	42	57.5%
	≥40 yea old	31	42.5%
3.	Education		
	Primary School	2	2.7%
	Junior Secondary School	13	17.8%
	Senior High School	35	47.9%
	Higher Education	23	31,5%
	Total	73	100

Table 1 shows that of the 73 respondents according to the highest gender category were male as many as 47 respondents (64.4%) compared to female gender as many as 26 respondents (35.6%), according to the highest age category with age <40 years as many as 42 respondents (57.5%) compared to those aged 40 years as many as 31 respondents (42.5%) and according to the education category with the highest order of high school (SMA) as many as 35 respondents 47.9% and the lowest is elementary school education (SD) as many as 2 respondents (2.7%).

Table 2.
Overview of Knowledge, Experience, and Preparedness Levels about Fire Disasters

No	Research Variables	n	%
1.	Knowledge Level		
	Less knowledge	24	32.9%
	Good knowledge	49	67.1%
2.	Experience		
	Less	54	74.0%
	Good	19	26.0%
3.	Preparedness		
	Less prepared	48	65.8%
	Ready	25	34.2%
	Total	73	100

Table 2 shows that of the 73 respondents according to the category of the highest level of knowledge, 24 respondents (32.9%) were well informed, 54 respondents (74.0%) were inexperienced, and 48 respondents (65.8%) were underprepared.

a. Characteristics of Respondents by Gender, Age and Education in Jayapura City

Based on table 1. Of the 73 respondents according to the gender category, it shows that male respondents are higher (64.4%) compared to female respondents (35.6%). This is in line with research conducted by Dentzler (2013) on the relationship between gender and family attitudes in disaster preparedness showing that men have better preparedness behaviour due to their awareness of responsibility, confidence and ability to handle disasters. Dentzler (2013) also showed that men need less assistance in disaster management.

Of the 73 respondents according to the age category showed that respondents aged <40 years were higher (57.5%) compared to respondents aged 40 years (42.5%). Another study conducted by Firmansyah (2014), in disaster-prone areas, found that respondents aged in the range of 20-45 years had the best level of knowledge about disaster mitigation.

Then of the 73 respondents according to the education category showed that respondents with high school education were higher (47.9%) and the lowest was elementary school (SD) (2.7%). This is in line with research conducted by Hoffmann (2017) explaining that higher levels of education have better

levels of preparedness because individuals with higher levels of education can access more diverse information from several sources.

b. Level of Community Knowledge about Fire Disaster in Jayapura City in 2023

Knowledge is a factor in community preparedness in the face of disasters, one of which is a fire disaster, knowledge is a basic aspect of preparedness that must be owned by every member of the community, in order to provide information to family members if a fire occurs. Knowledge possessed by the community can usually influence actions to be ready and alert in anticipation of disasters, especially for those who are vulnerable to natural disasters (Mariam et al., 2021).

Based on Table 2, it is known that the level of knowledge of respondents about fire disasters is highest with good knowledge as many as 49 respondents (67.1%) compared to less knowledge as many as 24 respondents (32.9%). The good level of knowledge in the people of Jayapura City is supported by the respondents' answers to each aspect of the statement in the questionnaire. This can be seen from some respondents who answered when a fire should go to a crowded place away from the location of the fire (88%), actions to be taken when indoors with fire smoke (81%), and what is used in fire prevention (77%).

The dominant knowledge of respondents is good because the community has experienced and witnessed fire disasters in the vicinity, as well as the addition of technology today about information. Good knowledge is a level where a person is able to know, understand, apply, analyse, synthesise, and evaluate (Gilmore et al., 2019).

Based on the results of the study, there were 35 respondents (47.9%) with high school education, and 23 respondents (23%) with university education, in this case the higher a person's education, the better knowledge a person has in accessing the information provided. According to Carter (2011), it is explained that the higher a person's level of education, the easier it is to receive information so that the more knowledge they have, in this case, especially knowledge about fire disaster preparedness.

Jayapura City is an urban area which is a vulnerable place for fire disasters due to the density of housing. Based on DAMKAR report data as of January 2022, there were fire cases that occurred in the housing area of Tanjung Ria Village with 1 case, Awiyo Village with 2 cases, and Ardipura Village with 1 case (Jayapura City Fire Department, 2022), so it can be concluded that good knowledge does not necessarily have a good impact if it is not applied in everyday life so empowerment is needed to implement public awareness in tackling fire disasters in Jayapura City.

c. Community Experience of Fire Disasters in Jayapura City in 2023

Based on Table 2, it is known that the category of respondents' experience of fire disasters is highest with less experience as many as 54 respondents (74.0%) compared to good experience as many as 19 respondents (26.0%).

Experience in dealing with a disaster is one of the factors that influence preparedness, because disaster experience can provide encouragement to be ready and alert. The experience that people have related to having experienced disasters in the past makes people accustomed to the threat of disasters, one of which is fire, but still disasters can endanger and threaten their lives. Therefore, disaster preparedness is very important because it can minimise the risks that may be received such as casualties, property losses and changes in the community's life order when natural disasters occur.

d. Community Preparedness on Fire Disaster in Jayapura City in 2023

Based on Table 2, out of 73 respondents there were 48 respondents who were less prepared to deal with fire disasters at 65.8%. Preparedness measures in the face of fire in the community of Kota Jayapura are still classified as lacking because few of them have the awareness to attend seminars, training or meetings related to fire disaster preparedness and also most people do not have a fire extinguisher / APAR in their homes.

The community has an important role in reducing the risk of fire disaster. A group or community in the community needs to strengthen and improve its disaster preparedness capabilities at the local and

community level. One indicator of preparedness is how early warning systems exist in the community, especially in areas that have fire disaster vulnerability. Warning systems include warning signs and information distribution in the event of a disaster (Wang et al., 2021). An example of early warning carried out in a small group in the Jayapura City community when a fire disaster occurs is by ringing church bells or loudspeakers in mosques as well as ringing electric poles in areas close to the fire disaster.

4. Conclusion

The distribution of respondent characteristics based on the gender category was mostly male as many as 47 respondents (64.4%), in the age category most people were <40 years old as many as 42 respondents (57.5%), and the education category mostly had a high school education (SMA) as many as 35 respondents (47.9%). The description of the highest level of knowledge is good knowledge as many as 24 respondents (32.9%). The picture of the highest experience is less experience as many as 54 respondents (74.0%). The highest picture of preparedness is less ready as many as 48 respondents (65.8%). Suggestion for the Community The people of Jayapura City should be more prepared to face the possibility of a fire disaster by attending training or simulations of fire disaster preparedness organised by the relevant government as the organiser. For the Government the government should organise community preparedness exercises in the face of fire disasters independently and continuously so that all residents can participate. Then there needs to be a distribution of disaster preparedness material to the community so that the community has knowledge about disaster preparedness. It is expected to provide facilities such as APAR Powder 6 kg at the RT level, APAD Trolley Powder 50 kg at the RW level and modified three-wheeled motorbikes with water tanks, pumps, and fire hoses at the Kelurahan level to prevent fire disasters. Future researchers can use this study as a reference on the preparedness of the people of Jayapura City in facing fire disasters. This study can be used as a reference in order to improve community preparedness. Future research in the field should focus on assessing the effectiveness and long-term impact of the suggested interventions for improving fire disaster preparedness in Jayapura City. Investigating the outcomes of community training sessions, government-organized exercises, and the distribution of preparedness materials will provide valuable insights into the resilience and responsiveness of the community. Additionally, researchers could explore the correlation between demographic factors (such as age, gender, and education) and varying levels of preparedness, helping tailor future initiatives to specific demographic needs. Furthermore, examining the sustainability of community engagement and the adoption of preparedness measures over time will contribute to the development of comprehensive and enduring strategies for minimizing the impact of fire disasters in urban areas like Jayapura City.

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