Jurnal Aisyah: Jurnal Ilmu Kesehatan

Volume 7, Issue 3, September 2022, p. 913–920
ISSN 2502-4825 (print), ISSN 2502-9495 (online)

Analysis of Factors Related to Family Alertness in Handling the COVID-19 Pandemic Effects at the "Kampung Tangguh" of Blitar City

Wahyu Nur Indahsah[1*], Yulian Wiji Utami [2], Dina Dewi Sartika Lestari Ismail[3]

[1,2,3]Department of Nursing, Faculty of Medecine, Brawijaya University, Malang, Indonesia

ARTICLE INFO

Article history:

Received 11 April 2022
Accepted 21 July 2022
Published 10 September 2022

Keyword:

Family alertness
Knowledge
Attitude
Social Capital

A B S T R A C T

The COVID-19 pandemic is a non-natural disaster impacting various life sectors, including the economy, social, health, and education sectors. The family has a critical role in the alertness phase in the pandemic disaster management in society. The alertness realization to handle COVID-19 pandemic impacts is creating tough village to actualize public participation and empowerment, particularly all family members at the village level, followed by alertness development to self-maintain health. The study was performed at Blitar City, involving householder (KK) in the tough village environment. The study involved seven villages in the tough village areas of Sananwetan District, i.e., Sananwetan, Bendogerit, Gedog, Karang Tengah, Plosokerep, Rembang, and Klampok Villages. The Sananwetan District was selected since it has the highest COVID-19 transmission case at Blitar City. The study aimed to condition factors related to family alertness in handling COVID-19 pandemic effects in tough village of Blitar City. The study used the cross-sectional survey design with 110 KK as respondents, utilizing the stratified random sampling method. Data analysis used was logistic regression to discover the most dominant factor affecting family alertness in handling COVID-19 pandemic effects. Data analysis results show that the social capital factor had the most dominant relationship with family alertness, with the highest beta value of 5.917. Based on this result, it can be concluded that social capital is the most dominant factor related to family alertness in encountering COVID-19 pandemic effects in tough village of Blitar City.

Kata kunci:

Kesiapsiagaan Keluarga
Pengetahuan
Sikap
Modal Sosial

**) corresponding author*

Wahyu Nur Indahsah

Department of Nursing, Faculty of Medecine, Brawijaya University, Indonesia
Jl. Veteran Malang East Java Indonesia,
Postcode: 64145; FAX: (0341) 564755

Email: wahyuindahsah@student.ub.ac.id
DOI: 10.30604/jika.v7i3.940

A B S T R A K

Pandemi COVID-19 merupakan bencana non alam yang berdampak pada berbagai sektor kehidupan, baik sektor perekonomian, sosial, kesehatan dan pendidikan. Keluarga memiliki peran penting dalam fase kesiapsiagaan dalam menejemen bencana akibat pandemi dalam lingkungan masyarakat. Wujud upaya kesiapsiagaan menghadapi dampak pandemi COVID-19 adalah dibentuknya kampung tangguh untuk mewujudkan peran serta dan pemberdayaan masyarakat, khususnya semua anggota keluarga di tingkat desa, disertai pengembangan kesiapsiagaan untuk memelihara kesehatan secara mandiri. Penelitian ini dilakukan di Kota Blitar dan melibatkan kepala keluarga (KK) di lingkungan kampung tangguh. Pada penelitian ini akan melibatkan 7 kelurahan yang ada pada wilayah kampung tangguh Kecamatan Sananwetan, yaitu Kelurahan Sananwetan, Bendogerit, Gedog, Karang Tengah, Plosokerep, Rembang, dan Klampok. Kampung tangguh Kecamatan Sananwetan dipilih karena merupakan wilayah yang memiliki kasus penyebaran COVID-19 paling tinggi di Kota Blitar. Tujuan dalam penelitian ini adalah untuk menganalisis faktor-faktor yang berhubungan

dengan kesiapsiagaan keluarga dalam menghadapi dampak pandemi COVID-19 di kampung tangguh Kota Blitar. Jenis penelitian ini menggunakan desain survey cross sectional dengan jumlah responden sebanyak 110 KK dengan tehnik pengambilan sampling menggunakan stratified random sampling. Analisa data yang digunakan adalah Regresi Logistik untuk mengetahui faktor yang paling dominan berhubungan dengan kesiapsiagaan keluarga menghadapi dampak pandemi COVID-19. Hasil analisa data menunjukkan faktor modal sosial paling dominan hubungannya dengan kesiapsiagaan keluarga dengan nilai beta paling besar yaitu 5.917. Berdasarkan hasil analisa tersebut dapat ditarik kesimpulan bahwa modal sosial merupakan faktor yang paling berhubungan dengan kesiapsiagaan keluarga dalam menghadapi dampak pandemi COVID-19 di Kampung Tangguh Kota Blitar.

INTRODUCTION

A disaster is a severe disturbance in society, causing extensive losses perceived by society, with material and environmental losses, where such impacts cannot be handled by humans with available resources (Khambali, 2017). A disaster can be caused by natural, non-natural, and human factors (social disasters). A disaster can result in a high death toll and injury rate, leading to infrastructure damages and economic losses for society (Tas F *et al.,* 2019).

Non-natural disaster trend and issues at the beginning of 2020 was the COVID-19 outbreak, with the first report being at Wuhan City, Hubei Province, China (Djalante *et al.,* 2020). Up to May 2021, WHO stated that 213 countries had reported COVID-19 cases, recording 4.417.903 cases with 297.382 deaths and daily case growth of 7% globally. Indonesia recorded 15.483 cases with 1.028 deaths simultaneously (Kemenkes RI, 2020).

According to Tam & Chan (2018), measures in reducing disaster risk include five priorities in disaster risk management, i.e., comprehending disaster risk, enhancing disaster risk management, investing in risk reduction, improving disaster alertness, and rebuilding in the recovery, rehabilitation, and construction. Risk management in the alertness stage to encounter disaster involves planning and preparation in handling disaster situations (Mirzana & Mudatsir, 2014). Family alertness plays a vital role since it is an integral part of efforts from individuals and emergency communities. The family alertness concept emphasizes on responsibilities and abilities of all family members to reduce damage risks requiring emergency assistance (Der-Martirosian *et al.*, 2014).

Several factors determine family alertness, i.e., knowledge, attitude, social capital, awareness of risk, previous disaster exposure, belief, economy, and resource potential (Chen *et al.*, 2014; Tomio *et al.,* 2014). There are obstacles related to family alertness in handling the disaster. The obstacle factors include lack of knowledge and attitude towards disasters, unrealistic evaluation towards disaster risks, and lack of resources (Dantzler, 2013; Debastiani *et al.,* 2015).

The realization of alertness efforts to handle COVID-19 pandemic effects is creating tough village to actualize the participation and empowerment of society, primarily all family members at the village level, followed by alertness development to self-maintain health (Kemenkes RI, 2018). Tough village implementation has various programs to prepare family and community to handle the COVID-19 pandemic. It also helps families understand and implement COVID-19 transmission prevention in the family and community (Pemprov Jatim, 2020).

Based on the survey result at Tough village Sananwetan District Blitar City, all householders have participated in tough village activities. Most have understood the COVID-19 transmission and prevention. However, based on the observation, some people remained not to wear a mask when going outside nor implement physical distancing. Although tough village has been created, the implementation has not fully involved society in alertness planning, and the COVID-19 disaster alertness protocol in tough village has not been optimally obeyed.

Based on this problem, the researchers were interested in identifying factors related to family alertness in handling COVID-19 pandemic effects in tough village of Blitar City and would like to scrutinize the most dominant factor related to family alertness.

METHOD

Study design and participants

It is a descriptive-analytic design using a cross-sectional design. The study respondents were 19.080 householders (KK) including seven villages at the Tough village Sananwetan District, i.e., Sananwetan, Bendogerit, Gedog, Karang Tengah, Plosokerep, Rembang, and Klampok Villages. The inclusion criteria of the study are 1) Families who live in a tough village, Sananwetan District, Blitar City, 2) Families who live permanently, 3) Can read, 4) Have access to smartphones and the internet, and 5) Families who listen by filling out questionnaires Meanwhile, the exclusion criteria are 1) Families who are not willing to participate in the study, and 2) Do not complete the questionnaire completely the study was conducted for approximately a month from 01 October to 01 November 2021.

Sampling procedures

The sampling technique utilized was stratified random sampling, obtaining 110 householders as respondents at Tough village Sananwetan District Blitar City, including Sananwetan Village (27 KK), Bendogerit Village (21 KK), Gedog Village (22 KK), Karang Tengah Village (14 KK),

Plosokerep Village (10 KK), Rembang Village (6 KK), and Klampok Village (10 KK).

Data collection and Procedure

The respondent's knowledge level in this study was measured using the modification theory from Green (2000) and questionnaire modification from Ahmad S (2017), involving 12 statements using six indicator dimensions of family alertness knowledge, i.e., alertness definition, alertness objective, pandemic effect, alertness principles, susceptibility threats and capacity, and warning system. The score categories in this questionnaire are good knowledge (8-12), moderate knowledge (4-7), and poor knowledge (0-3).

The respondent's attitude level in this study was measured using the modification theory from Green (2000) and questionnaire modification from Ahmad S (2017), Involving 12 statements using five indicator dimensions of family alertness attitude, i.e., risk assessment, self-protection need preparation, family alertness plan, information system in the family, and alertness participation. The score categories in this questionnaire are good attitude (36-48), moderate attitude (24-35), and poor attitude (12-23).

The respondent's social capital in this study was measured using the modification theory from Green (2000) and questionnaire modification from Ahmad S (2017), involving 12 statements using three indicator dimensions of family alertness social capital, i.e., trust, social network, and social norms. The score categories in this questionnaire are good social capital (36-48), moderate social capital (24-35), and poor social capital (12-23).

The respondent's family alertness in this study was measured using the modification theory from Handicap International (2014) and questionnaire modification from Ahmad S (2017), involving 12 statements using four indicator dimensions of family alertness, i.e., recognize the danger, plan the family contingency, create an open self network support, and practice and participation. The score categories in this questionnaire are good alertness (7-12) and poor alertness (0-6).

Based on the validity test result using the SPSS application with the bivariate person correlation technique (product Moment Person) with a 95% confidence level (significance of 5% = 0,05), the r-table values for knowledge, attitude, social model, and family alertness instruments was 0,3610, and thus is declared valid.

The reliability test results on the knowledge, attitude, social capital, and family alertness instruments were 0.947, 0.937, 0.961, and 0.844, respectively, with a Cronbach's Alpha value of over 0.6, And thus the study instrument is declared reliable.

Data analysis

The bivariate analysis in this study employed factors affecting family alertness, i.e., knowledge, attitude, and social capital on family alertness in handling the COVID-19 pandemic effect. The statistic test used Spearman with the SPSS program and the 95% confidence interval 95% or p≤0,05, Where H1 is accepted if the p-value < ¤ or p-value < 0,05 and H0 is accepted if p-value > ¤ or p-value > 0,05.

The multivariate analysis aimed to simultaneously discover the most affecting independent variable on the dependent variable. This study aimed to discover the most dominant factor on family alertness in handling COVID-19 pandemic effects. The statistic test utilized was the logistic regression test since the dependent variable is categorical.

RESULT

Table 1. Respondent Characteristic Distribution

No	Respondent Characteristics	Frequency (n)	Percentage (%)
1	**Age**		
	<30 years	22	20
	31-40 years	42	38.2
	41-50 years	36	32.7
	51-60 years	10	9.1
2	**Gender**		
	Female	5	4.5
	Male	105	95.5
3	**Education**		
	Middle School	18	16.4
	High School	33	30
	Higher Education	59	53.6
4	**Income**		
	<1 million	26	23.7
	1-3 million	60	54.5
	>3 million	24	21.8
5	**Length of Stay**		
	<10 years	43	39
	> 10 years	67	61
6	**Disaster Alertness Community**		
	No	100	91
	Yes	10	9
7	**Training**		
	None	85	77.3
	Present	25	22.7

Table 1 explains respondent characteristics based on age, gender, education, income, length of stay, disaster community, and training. Based on the above table, it was discovered that the respondents were dominated by 31-40-year-olds (38.2%) and males (95.5%). Based on education, it was revealed that most respondents were graduates of higher education (53.6%), and most had an income of 1-3 million (54.5%). Meanwhile, for the length of stay in Blitar, it was demonstrated that most respondents had stayed for >10 years (61%), did not join the disaster alertness community (91%), and never attended disaster-related training (77.3%).

Table 2. Respondent Characteristics Based on Knowledge, Attitude, Social Capital, and Alertness

No	Respondent Characteristics	Frequency (n)	Percentage (%)
1	**Knowledge**		
	Poor	17	15.5
	Moderate	24	21.8
	Good	69	62.7
2	**Attitude**		
	Poor	16	14.6
	Moderate	25	22.7
	Good	69	62.7
3	**Social Capital**		
	Poor	21	19.1
	Moderate	25	22.7
	Good	64	58.2
4	**Family Alertness**		
	Poor	37	33.6
	Good	73	66.4

Table 2 explains respondent characteristics based on knowledge, attitude, social capital, and family alertness. Based on the table, it was discovered that most respondents had good knowledge (62.7%), good attitude (62.7), good social capital (58.2%), and good family alertness (66.4%).

Table 3. Bivariate Analysis Results

Independent Variable	Dependent Variable	P-value
Knowledge	Family Alertness	0.000
Attitude	Family Alertness	0.000
Social Capital	Family Alertness	0.000

The bivariate analysis using the Spearman test (Table 3) suggests a significant relationship between knowledge, attitude, and social capital with family alertness (p=0.000). Based on the bivariate test result, it was discovered that knowledge, attitude, and social capital variables had p-values < 0.05. Therefore, the three independent variables were analyzed using logistic regression to discover the most dominant factor related to family alertness in handling COVID-19 pandemic effects.

The logistic regression analysis model was selected since independent and dependent variables have categorical scales, and the dependent variable has two categories. The logistic regression analysis has several steps, where the final step acquired results as presented in Table 4.

Table 4. Multivariate Analysis Results

Independent Variable	B	Sig	*OR*	CI 95%
Knowledge				
Knowledge (1)	-0.753	0.528	0.471	0.045 - 4.886
Knowledge (2)	0.447	0.715	1.564	0.142 - 17.276
Attitude		0.396		
Attitude (1)	1.695	0.264	5.448	0.279 - 106.419
Attitude (2)	-0.086	0.954	0.918	0.051 - 16.641
Social_Capital				
Social_Capital (1)	1.175	0.369	3.237	0.250 - 42.003
Social_Capital (2)**	5.917	0.000	371.459	22.461 – 6143.28
Constant	-3.515	0.013	0.030	

Based on the multivariate test results, it was discovered that social capital (2), i.e., good social capital, significantly affected family alertness (p = 0.000, OR 371.459 (22.461 – 6143.28)). It indicates that the social capital variable has the strongest relationship compared to the knowledge and attitude variables.

DISCUSSION

The study result demonstrated that good knowledge is necessary, primarily on actions mandatory to handle COVID-19 pandemic effects, i.e., preventing COVID-19 transmission. It is followed by alertness and policies, plans for an emergency, an early warning system for disasters, and sufficient resource mobilization. Therefore, families can encourage community alertness.

The average education level of communities at Tough Village Sananwetan District Blitar City is higher education/academic graduates by 53.6%. It follows the predecessor study, explaining that knowledge is highly related to educational level, which then becomes a hope that high education will expand knowledge (Groves S, 2013). It is also in line with the previous study that individuals graduating from higher education will be more ready and confident in facing disaster effects. Meanwhile, individuals without higher education experience will most likely depend on others regarding alertness (Kim & Kang, 2010). Good knowledge will affect the creation of a good attitude, such as disclosed by the previous researcher, where disaster education aims to foster responsive attitude towards various disasters to avoid fatal risk and encounter disaster risk with alert and responsive attitudes to minimize worse effects (Tomio *et al.,* 2014).

The study result also demonstrated that most respondents had income reaching the City Minimum Wage (UMK) of Blitar City by IDR 2.004.705 (BPS Kota Blitar, 2021). It will improve family abilities in planning their needs and accessing knowledge and information regarding COVID-19 pandemic effects. A previous study by Dantzler (2013) also mentioned that knowledge concerning alertness is affected by age. Individuals aged 18-54 years demonstrated better knowledge and experience in encountering disasters. It follows the study results showing that most respondents aged 31-40 years by 38.2%.

Attitude is individual willingness to act. Also, attitude is an action or behavior (Dantzler, 2013). According to Azwar (2010), there are two components of attitude factors in the family. First, it involves risk perception, and second, it involves previous disaster experience. The study result showed that, from 110 respondents, 62.7% had good knowledge, 62.7% had a good attitude, and 66.4% had good alertness. Knowledge on alertness in encountering COVID-19 pandemic effects can be obtained through mobilization of available resources in the family to participate in health socialization and COVID-19 prevention follow-up education within the tough village community area.

Attitude on alertness is a behavior concerning prevention and disaster modification due to a disaster (Mizam, 2012). Knowledge affects attitude towards alertness regarding a disaster, and the impact of such a disaster attitude plays a role in community alertness and self-salvation from the disaster. The better the alertness attitude in handling the COVID-19 pandemic, the impact emerge from such a pandemic can be prevented.

Social capital in alertness involves three aspects, i.e., trust, social network, and social norm (Dantzler, 2013). Based on the study result, it was discovered that the respondent's social capital was good by 58.2%. Social capital in knowledge concerning COVID-19 pandemic effects was observed from the community's cooperating and understanding in a threatening condition due to dangers emerging from the pandemic effect, starting from health, social, and economy. It was prominent on the social network aspect by the massive number of health socialization and education at tough village Blitar City by the local government in cooperation with the Health Office. Therefore, the community wants, knows, and is able to access information sources concerning COVID-19 at the tough village, e.g., symptoms, prevention, and information access search regarding health care facilities.

It follows a precedent study, demonstrating that trust in a community leads members to cooperate in possessing togetherness, volunteerism, and help in family members (Meyer, 2013). Social norms and public relations affect disaster and family alertness, whereas a good social community network shows a better behavior of disaster alertness (Mulilis *et al.,* 2012).

Public engagement produces positive psychology and behaviors (Kim & Kang, 2010). There is a positive correlation between public engagement and disaster alertness. Social capital and alertness in handling COVID-19 pandemic effects can provide families with benefits and policies, trust, values, and networks to help and strengthen each other from threats during the pandemic condition.

The multivariate analysis result showed that social capital had a higher OR value of 371.459. It indicates that the social capital variable has the strongest relationship compared to the knowledge and attitude variables. The community's existing social network is related to the success of emergency, prevention, and recovery during the pandemic, one of which is the existence of the tough village.

Tough village application during the pandemic era is participation from grassroots or the community (family) to the government. Therefore, it is expected that all family members want to participate in implementing a tough village. In a tough village, there are various programs to actualize the association and cooperation between people to prepare alert family and community in encountering the COVID-19 pandemic, for instance, implementing Healthy and Clean Lifestyle (PHBS), education and consultation with health care workers or leaders staying at the village, alertness measures, resource mobilization, and basic health care services following the public competency. Therefore, tough village programs will create a network to facilitate families preparing themselves for the pandemic condition.

It follows a study by Hawkins & Maurer (2010), showing that good social capital bonding between people will provide access to various sources and disaster situations, including information, help, financial source, facilities infrastructure, emotional support, and psychological support. Another researcher suggested that a family with a good social network will improve the possibility of rebuilding its house after a disaster. It can occur when encountering the COVID-19 pandemic. A good social network will augment information sources so that preparation and alertness conducted by the family will be better (Tse C *et al.*, 2013). It is in line with the pandemic condition that trust between people will produce cooperation and solidarity, positive support, information exchange, and awareness on the community to improve alertness and preparation in facing a pandemic.

A community with high levels of trust, norm, participation, and social network can improve alertness and recover from a disaster faster (Sumaiya *et al.*, 2015). This statement follows the disaster due to the COVID-19 pandemic, where the tough village is a social capital place in the community with numerous resources to be used, roles, and families. Therefore, people in the tough village are able and ready to prevent and encounter effects due to the COVID-19 pandemic.

Nursing implications in the study involve family alertness that is crucial in the overall disaster management strategy, including in handling the COVID-19 pandemic effects. Emergency nurses are expected to play a role in preventive activities, e.g., socializing risk reduction of virus infection transmission in a concept in practice and various systematical measures to analyze and manage factors causing COVID-19 transmission. Also, they are expected to conduct primitive activities to improve community readiness in encountering COVID-19 pandemic effects, such as preventing virus transmission on themselves, families, and

the community. It also includes first aid training on families infected with the virus, such as early treatment to reduce the symptoms and limit contacts with other family members, providing information about storing and carrying supplies of medicines, safe ways of socializing, providing communication channels and information on parties who must be contacted if family members are affected by symptoms, such as health workers in tough villages, village officials, isolation houses, hospitals, and ambulance.

LIMITATION OF THE STUDY

The study is limited since it was conducted during the pandemic era, affecting the study practice. During the pandemic era, there were activity restrictions and health protocol implementation on the community, primarily for physical distancing. Therefore, the study was carried out indirectly by Google Form distributed through social media instead of interviews, and hence, reducing the researcher's observation concerning conditions surrounding respondents and not maximizing data collected by the researcher without face-to-face contact.

CONCLUSIONS AND SUGGESTIONS

The study concludes that knowledge, attitude, and social capital are significantly related to family alertness in handling the COVID-19 pandemic at Tough Village Blitar City. The study also demonstrated that social capital is the most dominant factor in family alertness.

The suggestion for a family is to improve knowledge by attending health training and education held by the local government at the tough village. It is also recommended to create an alertness plan for the short or long term, leaving the family ready to handle COVID-19 pandemic effects well. Meanwhile, the Blitar City government is expected to eliminate disaster alertness obstacles, such as the lack of alertness knowledge, negative attitudes toward alertness, poor participation, and unrealistic risk assessment through alertness training and campaigns by considering the risk index from each disaster with local wisdom approach. Future researchers are expected to equip this study with a qualitative study such as an ethnographic study to explore further the pattern and culture of family alertness in Blitar City.

Acknowledgments

The author expresses gratitude for the support from the Nursing Master's Program, Faculty of Nursing, Faculty of Medicine, Universitas Brawijaya, Indonesia. The author also expresses gratitude for Sananwetan District, which has facilitated the study activities.

ETHICAL CONSIDERATIONS

This study has acquired a certificate of ethical approval from the Health Research Ethics Commission, Faculty of Medicine, Universitas Brawijaya, number 313/EC/KEPK-S2/11/2021 on 01 November 2021.

Funding Statement.

This study did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors

Conflict of Interest Statement

The authors whose names are listed immediately below certify that they have no involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in a speaker's bureau; membership, employment, consulting, shareholding, or equity interests others; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationship, affiliation, knowledge or belief) in the subject matter or material discussed in this manuscript.

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 ISSN 2502-4825 (print), ISSN 2502-9495 (online)