International Journal of Public Health Science (IJPHS)
Vol. 11, No. 3, September 2022, pp. 1125~1132
ISSN: 2252-8806, DOI: 10.11591/ijphs.v11i3.21377

Related factors to fear and stigma of COVID-19

Ernawati Umar[1], Ahmad Darajat[2], Ilma Fiddyanti[3], Lili Amaliah[4]
[1]Department of Nursing, Faculty of Medicine, University of Sultan Ageng Tirtayasa, Banten, Indonesia
[2]Department of Nursing, Faculty of Medicine, Stikes Widya Dharma Husada, Banten, Indonesia
[3]Radiology Department, University of Jendral Ahmad Yani, Bandung, Indonesia
[4]Nutrition Department, University of Sultan Ageng Tirtayasa, Banten, Indonesia

Article Info

Article history:

Received Sep 28, 2021
Revised May 2, 2022
Accepted June 21, 2022

Keywords:

COVID-19
Discrimination
Fear
Indonesia
Stigma

ABSTRACT

Few studies have explored the fear and stigma of COVID-19 among the general Indonesian population. This study aimed to investigate the fear and stigma of COVID-19-related factors among the general population. A cross-sectional study was done in Banten, Indonesia, from Augustus to September 2020. Sample of the studywas recruited using convenience sampling. Multivariable linear regression model was used to analyze data. The majority of respondents were female (66.9%), with the mean age was 32.5 (SD=8.7). Fear of COVID-19 score was negatively associated with social support. Stigma towards COVID-19 score was negatively associated with higher education level, knowledge, social support. It positively associated with non-healthcare professional living in the city, confirmed COVID-19, suspected case, quarantine for close contact, and fear of COVID-19. The results indicated that the COVID-19 fear and stigma have been experienced by many of the general Indonesian community. Therefore, public health education and awareness-raising of the significance of public support are needed to remove the perceived stigma.

Corresponding Author:

Ernawati Umar
Department of Nursing, Faculty of Medicine, University of Sultan Ageng Tirtayasa
Raya Palka No. Km 3, Panancangan, Cipocok Jaya, Serang, Banten 42124, Indonesia
Email: Ernawatiumar08@gmail.com

1. INTRODUCTION

COVID-19 is a disease that has a significant impact on public health around the world. This pneumonia-like disease first appeared in Wuhan, China, in November of 2019, and was later designated as coronavirus disease 2019 (COVID 19) by the World Health Organization [1]. Despite only being in existence for a few months, COVID-19 has already caused major harm to public health, as well as financial and economic loss in numerous nations. Globally, there have been 306,194,548 confirmed instances of the disease, with a total of 5,503,810 confirmed deaths. As of January 9, 2022, cases of COVID-19 had been documented in more than 220 nations across six different geographic regions worldwide. It is still the United States that has the highest number of confirmed cases and fatalities, followed by countries like India, Brazil, and the United Kingdom, which collectively represent 43% of all known cases around the world [1]. In Indonesia, there have been 4,265,666 confirmed cases of COVID-19, with a total of 144,127 confirmed deaths [2]. In terms of the number of confirmed cases and deaths, the country placed top among the ASEAN countries in this category. However, this occurred despite intensive precautions to prevent disease transmission from occurring, such as rigorous social distancing, community quarantines, and disease education programs.

The significant increase in COVID-19 infections has heightened public concern in several countries. [3]–[5]. During times of infectious epidemic crises, the severity and mortality of disease, as well as a person's

susceptibility to disease, can cause or increase anxiety and panic, which can have a negative impact on their health and well-being, as well as their ability to perform their jobs effectively [6]. During the COVID-19 pandemic, increased fear combined with financial and social difficulties can lead to depression and anxiety that affect both the individual and society [6]–[8]. The other aspect of this crisis is a result of preventive measures enforced by civic authorities, disease control centers, and numerous health organizations, with a particular emphasis on social isolation. Social isolation can result in a lack of social interactions on a daily basis. This adds another layer of complexity to individuals' coping methods, as the employment of maladaptive coping techniques may contribute to an increase in symptoms such as dread, anxiety, and depressive symptoms [9]. Numerous studies demonstrate that extended social isolation and loneliness increase the likelihood of depression developing in the general population [10]. This phenomenom could be exacerbated further by concerns about and issues affecting personal, family, and community well-being [11], [12] as a result of the lingering economic crises induced by pandemics, hence contributing to the prevalence of symptoms.

A new form of prejudice against people living with COVID-19 or who get the disease has evolved in some societies [3]. Additionally, COVID-19-related stigma may cause a variety of severe repercussions for those impacted, including persons returned from abroad who have tested positive for COVID-19, as well as possible and diagnosed cases and survivors of COVID-19 [8], [9]. Stigma may become a barrier to the prevention and control of COVID-19 since people suffering from a high degree of stigma may be less likely to disclose their health [13], [14]. Stigma is a crucial component of unfairness structures, and lessons learned from earlier pandemics show that addressing stigma is critical to a successful and fair response to COVID-19. Many studies on human immunodeficiency virus (HIV) and Ebola showed stigma experienced by those affected diseases [15]–[17]. Because COVID-19 is new, numerous unknowns and concerns related to this novelty may contribute to anxiety and further entrench stereotypes and stigmas [18].

Since the coronavirus disease epidemic in November 2019, many studies have been completed and published on the consequences of the disease outbreak on general population mental health. However, despite the growing number of studies on the subject, few studies have been undertaken to determine whether the mental consequences and stigma associated with COVID-19 have an impact on results. Unmanaged worry or concern about COVID-19 may have long-term repercussions on work performance and job satisfaction [19], [20]. To date, few studies have explored the fear and stigma of COVID-19 among the general Indonesian population. It is critically important to examine whether fear and stigma of COVID-19 to provide important information for policymakers and administrators to successfully support the mental health of Indonesian citizens and maintain a well-engaged, especially during this pandemic. Therefore, this study aimed to investigate the fear and stigma of COVID-19-related factors among the general population in Indonesia.

2. RESEARCH METHOD

2.1. Study design

A cross-sectional was done from Augustus to September 2020 in Banten, Indonesia. Banten as Indonesia's westernmost province, is recognized for its wilderness areas and seaside villages. Based on the Banten Provincial Government data as of June 21, the total active cases were 54,216 cases, 2,962 patients were treated, 49,854 patients recovered, and 1,390 patients passes away [2].

2.2. Sample

All people at the minimum age of 18 and fluent in Indonesian were recruited using convenience sampling. The sample sizes eas estimated using the G*Power software version 3.1.92 with asumssion, alpha=0.05, a power of 0.95, an effect size of 0.05, and ninth variables were applied. A minimum sample of 322 should be recruited. A brochure inviting them to participate in the study was delivered through social media, and over 1,000 potential respondents were reached. Hence, 780 respondents were returned (response rate was 78%), unforntunately 20 respondents were eliminated due to missing data. Thus, the study covered a total of 750 repondents.

2.3. Instruments

Socio-demographic characteristics included age, employment, sex, education levels, employment, marital status, religion, residence, and health status. There are two types of occupations: health professionals and non-health professionals. The health status is classified into four categories: confirmed COVID-19 infection, possible COVID-19 infection, quarantine for people who have close contact, and non-infected.

The stigma associated with COVID-19 was measured using the social impact scale (SIS) with 24-items [21]. The SIS is divided into four dimensions: social rejection, financial insecurity, emotional shame, and social isolation. From “strongly disagree” to “strongly agree,” the SIS item values range from 24 to 96. The current study's Cronbach alpha is 0.82.

Fear of COVID-19 was measure using a 5-item [6]. A five-point scale from "strongly disagree" to "strongly agree" was used to assess participant response to each item. Higher scores indicate higher fear of COVID-19. The Cronbach's alpha in the current study was 0.85. Questions on the knowledge were prepared in a true/false format, and a scoring system was developed to determine how well the respondent understood the material [22]. COVID-19 prevention had eight questions, and nine questions were about COVID-19 symptoms and transmission. Incorrect responses got zero points. The Cronbach's alpha in this study was 0.79.

Social support is evaluated by the short form of multifaceted Social Support Interpersonal Interactions [23]. This includes three dimensions: family, friend, and significant other supports. The scale consists of six items, each assessed on a seven-point Likert scale (1=strongly disagree, 7=strongly agree). The Cronbach's alpha d in the current study was 0.81. The multidimensional scale of perceived social support was used to measure perceived government support [23]. It comprises five questions, each of which is assessed on a seven-point Likert scale (1 being "very disagree" and seven beings "strongly agree." The Cronbach's alpha for the scale used in the current study was 0.80.

2.4. Data collection procedure

The research work has been approved by the Institute Review Board (E034/III/ETIK/2020). Participants who received and clicked the link were taken to a description of the study and informed consent. Participants were prompted to click the agreement button at the bottom of the consent form if they had no concerns. After agreeing to participate in the survey, individuals were requested to provide demographic information and fill out additional sets of questions presented. The participants were not required to provide any personally identifiable information and were advised not to answer any questions that may provoke negative emotions since the tools might have certain items that cause distress. Responses were immediately kept on Google Drive with an encryption key and may only be accessed by the researchers who conducted the study. Respondents were requested to distribute the form among their colleagues. There were no monetary incentives offered in exchange for involvement.

2.5. Data analysis

The data was described using descriptive statistical analysis. The Kolmogorov–Smirnov test was performed to assess the variable distribution. The overall COVID-19-related stigma scores were analyzed using independent samples t-tests and one-way ANOVA. The Pearson correlation test was used to conduct the correlation analysis. Models of multivariate linear regression were utilized to identify the factors linked with COVID-19 stigma and fear. SPSS 22.0 for Windows statistics software was used for the statistical analysis. A p-value less than 0.05 was considered statistically significant.

3. RESULTS AND DISCUSSION

3.1. Results

The majority of respondents were female (66.9%), had secondary level of education (51.7%), married (52%), Muslim (83.1%), and non-health professional (53.3%). Most of them lived in the city (54.7%) and were quarantined for close contact (48%). The age range was from 18 to 55, and the mean age was 32.5 (SD=8.7). Females had a secondary level of education, and non-health professionals were more experience fear of COVID-19. Female, had tertiary level of education, married, non-Muslim, health professional, living in the city are, and confirmed with COVID-19 were more experience of COVID-19 related stigma as presented in Table 1.

Respondents reported higher financial insecurity (mean=3.13, SD=0.78), followed by social rejection (mean=3.08, SD=0.84), and social isolation (mean=2.49, SD=0.60). The mean of fear was 3.12 (SD=1.34), knowledge was 18.2 (SD=9.34), social support was 4.97 (SD=1.71), and government support was 4.34 (SD=1.68). Bivariate analysis showed a significant correlation between social rejection, financial insecurity, internalized shame, social isolation, knowledge, fear, social support, and government support ($p<0.05$) as shown in Table 2.

Multiple regressions analysis was conducted to examine factors associated with fear towards of COVID-19. Participants' overall fear of COVID score was positively associated with female), non-healthcare professional, living in city, confirmed with COVID-19, suspected, quarantine for close contact, and knowledge. Fear of COVID-19 score was negatively associated with social support (β =-0.18, 95%, CI=-0.77, 0.07). The overall adjusted R square was 0.39 as shown in Table 3.

Table 1. Background characteristics and fear and stigma towards COVID-19

Variables	N (%)	Fear of COVID-19 score			Total stigma of COVID-19 scores		
		Mean ± SD	t/F-test	p-value	Mean ±SD	t/F-test	p-value
Sex							
Male	248 (33.1)	2.52±0.14	7.56	<0.001	65.2±28.6	12.43	0.010
Female	502 (66.9)	3.52±0.09			70.2±27.3		
Age							
18-30 years old	396 (52.8)	2.61±0.19	0.04	0.563	57.1±9.0	0.07	0.951
31–40 years old	250 (33.3)	2.30±1.27			54.6±13.2		
41–50 years old	40 (5.3)	2.06±1.08			56.6±18.8		
>50 years old	64(8.5)	2.11±1.21			56.8±17.9		
Level of education							
Secondary level	388 (51.7)	3.21±1.43	3.64	0.031	52.2±17.6	11.53	<0.001
Tertiary level	362 (48.3)	2.55±1.02			68.5±12.1		
Marital status							
Married	390 (52.0)	2.10±1.00	0.34	0.105	59.1±17.5	4.77	0.006
Single/Widowed/Separated	360 (48.0)	2.44±0.92			53.0±18.6		
Religion							
Muslim	623 (83.1)	3.22±1.56	0.39	0.362	54.9±12.4	1.39	0.016
Non-Muslim	127 (16.9)	3.38±1.26			58.7±14.5		
Occupation							
Health professional	350 (46.7)	2.87±1.56	4.22	0.023	77.6±19.4	8.39	<0.001
Non-health professional	400 (53.3)	3.44±1.72			57.4±15.9		
State of residence							
City	410 (54.7)	3.21±1.43	0.98	0.098	51.6±14.2	7.20	<0.001
District	340 (45.3)	3.05±1.19			68.2±16.1		
Health status							
Confirmed COVID-19	130 (17.3)	3.51±2.14	1.23	0.467	79.7±18.3	11.07	<0.001
Suspected	140 (18.7)	3.47±1.56			64.8±17.0		
Quarantined for close contact	360 (48.0)	3.05±1.75			60.1±15.9		
Not infected	120 (16.0)	2.71±1.48			55.2±17.6		

Table 2. Mean, standard deviation, and bivariate correlations

Variables	Mean ± SD	1	2	3	4	5	6	7	8
Social rejection	3.08±0.84	1.00							
Financial insecurity	3.13±0.78	0.35**	1.00						
Internalized shame	2.36±0.54	0.23**	0.37**	1.00					
Social isolation	2.49±0.60	0.35**	0.43**	0.42**	1.00				
Knowledge	18.2±9.34	0.29**	0.35**	0.44**	0.40**	1.00			
Fear	3.12±0.75	0.19**	0.28**	0.33**	0.42**	-0.39**	1.00		
Social support	4.97±1.61	-0.27**	−0.30**	-0.46**	-0.40**	0.50**	−0.41**	1.00	
Government support	4.34±1.68	−0.26**	−0.18**	−0.16**	-0.27**	0.35**	0.26**	0.38**	1.00

Note: p <0.05; **p <0.01

Table 3. Multivariable linear regression models for factors associated with fear of COVID-19

Variables	Overall fear score β (95% CI)
Female	0.19 (0.11, 1.42) *
Increasing age in years	0.21 (-0.13, 2.78)
Higher education	-0.15 (-0.78, 2.40)
Non-healthcare professional	0.23 (0.16, 2.06) *
City	0.15 (0.08, 2.14) *
Health status	
Confirmed COVID-19	0.43 (0.15, 6.09) **
Suspected	0.28 (0.17, 4.91) **
Quarantined for close contact	0.23 (0.18, 4.87) **
Not infected	0.21 (-0.11, 3.91)
Knowledge	0.37 (0.19, 4.58) **
Social support	-0.18 (-0.77, 0.07) *
Government support	0.04 (-0.18, 0.46)
Adjusted R^2	0.39

Note: *p<0.05; **p<0.01

In the multivariable regression analysis, overall stigma towards COVID-19 score was negatively associated with higher education level, knowledge, and social support, and positively associated with non-healthcare professional, living in the city, confirmed COVID-19, suspected case, quarantine for close contact, and fear of COVID-19. Social rejection was negatively associated with social support and positively associated with the general population and confirmed COVID-19. Financial insecurity was negatively

associated with education level and social support and positively associated with non-healthcare professionals living in the city area, confirmed COVID-19, and suspected case. Internalized shame was negatively associated with knowledge and social support and positively associated with fear of COVID-19. Social isolation was positively associated with non-healthcare professionals, confirmed COVID-19 and suspected case as shown in Table 4.

Table 4. Multivariable linear regression models for factors associated with COVID-19 related stigma and its subscales

Variables	Overall stigma score β (95% CI)	Social rejection β (95% CI)	Financial insecurity β (95% CI)	Internalized shame β (95% CI)	Social isolation β (95% CI)
Higher education	-0.19 (2.31, -0.50)**		-0.31 (-1.08, -0.46)*		
Non-healthcare professional	0.18 (0.10, 5.13)**	0.15 (0.01, 0.85)*	0.24 (0.03, 1.62)*		0.31(0.16, 2.06)*
City	0.17 (0.01, 7.13)*		0.21 (0.21, 3.49)**		
Health status					
Confirmed COVID-19	0.23 (0.43, 2.09)**	0.13 (0.07, 2.34)**	0.21 (0.10, 2.16)**	0.18 (0.05, 3.39)**	0.17 (0.08, 3.21)*
Suspected	0.18 (0.07, 2.91)**		0.24 (0.03, 3.11)*		0.15 (0.06, 3.12)*
Quarantined for close contact	0.14 (0.10, 3.81)*				
Knowledge	-0.14 (-1.08, -0.24)*			-0.17 (-3.27, -0.25)*	
Fear of COVID-19	0.25 (0.18, 4.83)**			0.16 (0.10, 2.85)*	
Social support	-0.24 (-1.55, -0.11)*	-0.13 (-0.52, -0.06)*	-0.20 (-1.44, -0.31)**		
Government support	0.17 (-2.19, -0.40)*				
Adjusted R^2	0.43	0.29	0.32	0.30	0.35

3.2. Discussion

Our preliminary data showed that most participants had encountered some level of fear, similar to the findings in Jordan [24]. Fear of COVID-19 may lead to delays in getting medical care or suicidal behavior [25]. It is vital to identify adverse psychological disorders and carry out adequate early detection to limit and control COVID-19 spread and associated adverse mental health outcomes [8]. Additionally, this study discovered that fear was substantially connected with individuals confirmed to have COVID-19, suspected cases, and those who were quarantined due to close contact. Fears are not solitary occurrences; they are group-based and arise from the widespread use of social media. As a result, minimizing individual fear is critical for preventing the transmission of COVID-19.

Females were found to be more fearful of COVID than males. It may be that this is related to the fact that women tend to take on a more significant load during a pandemic, as well as with the generally higher rates of stress that women experience in their lives [26]. Similar results have been observed in China, when women in the early phase of the COVID-19 assessed their fear as moderate to severe [27]. Other predictors of fear of a pandemic were found in prior investigations, but this was not the case in the current research [28]. Older adults are probably more proficient in regulating emotions than their youthful people and exhibit less fear than elderly individuals. Non-healthcare professionals and living in the city are associated with a high level of fear. During the epidemic, myths and disinformation that primarily concern the general public harm the general people's psychological health [29]. Individuals with a higher level of health literacy are more likely to have a more positive attitude toward health-related information [30]. A prior study found that health literacy protects against mental illness [31].

Results indicate that the majority of participants were subjected to some degree of COVID-19 stigmatization. In the past, stigmatization associated with infectious diseases had been documented in an Eastern country [32]. Likewise, the current COVID-19 epidemic could have led to stigmatization, such as social isolation, prejudice, self-denying, and shame [33]. Due to the ambiguity surrounding COVID-19 and its dynamic nature, various erroneous ideas and myths may emerge in society and be disseminated by the media [34]. The stigma associated with COVID-19 may affect health issues not just on an individual's level but also on a societal level by altering, deteriorating, or interfering with daily contact and physiological reactions [35]. Addressing COVID-19-related stigma, its determinants, and enablers requires multi-level, long-term, and comprehensive approaches [34]. In order to be effective, COVID-19 stigma-focused

treatments that target the entire Indonesian community must be developed and integrated into the existing system.

Social support may help alleviate the fear and stigma associated with COVID-19. Social support is protective for persons exposed to an epidemic [36]. An earlier study revealed that recognizing social support helps determine psychological health [37]. Several studies have found that stereotyping is a substantial cause of stress for disadvantaged groups and that perceived risk information brings people into a state of distress [38]. However, prior research has indicated that many persons did not receive adequate support or counseling during the COVID-19 pandemic [24]. It is possible that increasing social support, such as through self-affirmation training, will be beneficial [39].

Overall COVID-19 stigma was adversely associated with higher education and knowledge levels. These findings support prior research that found a negative relationship between higher education and the stigma of COVID-19 [40]. Previous research indicates that people lack a comprehensive knowledge of the COVID-19 virus's transmission mechanisms, owing to non-scientific preconceptions and an insufficient comprehension of the virus's biology [41]. For instance, some people believe that treated patients and healthcare professionals in a hospital can spread infection. It also involves ambulance crews, COVID-19 patients' families, and even survivors discharged from the hospital [41]. Assessing people's understanding of the condition to identify stigma better, working with community agencies to tackle stigma, and raise public awareness and education in skill development to combat stigma are effective measures to reduce epidemic stigma.

This study has several limitations that should be noted. Because this was a cross-sectional study, causal relationships between fear and stigma with other variables could not be investigated. Second, although determinants of felt stigma were reported for findings, external stigma was not evaluated. Third, due to mobility restrictions throughout the study period, this study adopted a non-probability sequential. Future research using probability sampling and incorporating non-internet users (including the ignorant) would help corroborate our findings, as these persons can spread sickness locally.

4. CONCLUSION

The results indicate that the COVID-19 fear and stigma have been experienced by many of the general Indonesian community. Therefore, public health education and awareness-raising of the significance of public support are needed to remove the perceived stigma. Several factors predicted fear and stigma associated with the COVID-19 epidemic. Our data indicated that COVID-19 had a significant negative impact on persons' mental health. The current study suggests that governments should provide psychosocial support to people during pandemics. A suitable mental wellbeing therapy to increase social support for the high-risk group and reduce social stigma and discrimination could reduce the epidemic's psychological impact. In meeting that requirement, telepsychiatry may also have a role to play: telephone and video calls can support traditional psychotherapy.

REFERENCES

[1] W. H. Organization, "Coronavirus disease 2019 (COVID-19): situation report, 73," World Health Organization, 2020.
[2] Department of Health, "Updates on novel coronavirus disease (COVID- 19)," 2022.
[3] B. Tang *et al.*, "Estimation of the transmission risk of the 2019-nCoV and its implication for public health interventions," *Journal of Clinical Medicine*, vol. 9, no. 2, p. 462, Feb. 2020, doi: 10.3390/jcm9020462.
[4] C.-Y. Lin and others, "Social reaction toward the 2019 novel coronavirus (COVID-19)," *Social Health and Behavior*, vol. 3, no. 1, p. 1, 2020, doi: 10.4103/shb.shb_11_20.
[5] T. Kobayashi *et al.*, "Communicating the risk of death from novel coronavirus disease (COVID-19)," *Journal of Clinical Medicine*, vol. 9, p. 580, Feb. 2020, doi: 10.3390/jcm9020580.
[6] D. K. Ahorsu, C.-Y. Lin, V. Imani, M. Saffari, M. D. Griffiths, and A. H. Pakpour, "The fear of COVID-19 scale: development and initial validation," *International Journal of Mental Health and Addiction*. pp. 1–9, Mar. 2020, doi: 10.1007/s11469-020-00270-8.
[7] G. Pappas, I. J. Kiriaze, P. Giannakis, and M. E. Falagas, "Psychosocial consequences of infectious diseases.," *Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases*, vol. 15, no. 8, pp. 743–747, Aug. 2009, doi: 10.1111/j.1469-0691.2009.02947.x.
[8] Y.-T. Xiang *et al.*, "Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed.," *The lancet. Psychiatry*, vol. 7, no. 3, pp. 228–229, Mar. 2020, doi: 10.1016/S2215-0366(20)30046-8.
[9] K. Hamza Shuja, M. Aqeel, A. Jaffar, and A. Ahmed, "COVID-19 pandemic and impending global mental health implications," *Psychiatria Danubina*, vol. 32, no. 1, pp. 32–35, 2020, doi: 10.24869/psyd.2020.32.
[10] T. Matthews *et al.*, "Social isolation, loneliness and depression in young adulthood: a behavioural genetic analysis," *Social Psychiatry and Psychiatric Epidemiology*, vol. 51, no. 3, pp. 339–348, 2016, doi: 10.1007/s00127-016-1178-7.
[11] A. Mindoljević Drakulić and V. Radman, "Crisis psychodrama in the era of COVID-19," *Psychiatria Danubina*, vol. 32, no. 1, pp. 22–24, 2020, doi: 10.24869/psyd.2020.22.
[12] A. E. Zuelke *et al.*, "The association between unemployment and depression–results from the population-based LIFE-adult-study," *Journal of Affective Disorders*, vol. 235, pp. 399–406, 2018, doi: 10.1016/j.jad.2018.04.073.

[13] B. Person, F. Sy, K. Holton, B. Govert, A. Liang, and N. C. for I. D. C. O. Team, "Fear and stigma: the epidemic within the SARS outbreak," *Emerging Infectious Diseases*, vol. 10, no. 2, pp. 358–363, Feb. 2004, doi: 10.3201/eid1002.030750.
[14] A. L. Stangl *et al.*, "The health stigma and discrimination framework: a global, crosscutting framework to inform research, intervention development, and policy on health-related stigmas," *BMC Medicine*, vol. 17, no. 1. p. 31, Feb. 2019, doi: 10.1186/s12916-019-1271-3.
[15] J. Ziegler, *Foundations of biosocial health: stigma and illness interactions*. Lexington Books, 2017.
[16] A. P. Mahajan *et al.*, "Stigma in the HIV/AIDS epidemic: a review of the literature and recommendations for the way forward," *AIDS*, vol. 22, no. Supp 2, pp. S57-S65, 2008, doi: 10.1097/01.aids.0000327438.13291.62.
[17] M. Karamouzian and C. Hategekimana, "Ebola treatment and prevention are not the only battles: understanding Ebola-related fear and stigma," *International Journal of Health Policy and Management*, vol. 4, no. 1, pp. 55–56, 2015, doi: 10.15171/ijhpm.2014.128.
[18] U. IFRC, "Social stigma associated with COVID-19. A guide to preventing and addressing social stigma." WHO, 2020.
[19] S. A. Lee, "Coronavirus anxiety scale: A brief mental health screener for COVID-19 related anxiety," *Death studies*, vol. 44, no. 7, pp. 393–401, 2020, doi: 10.1080/07481187.2020.1748481.
[20] J. A. de Los Santos and L. Labrague, "The impact of fear of COVID-19 on job stress and turnover intentions of frontline nurses in the community: a cross-sectional study in the Philippines," *Traumatology*, vol. 27, no. 1, pp. 52–59, Jan. 2021, doi: 10.1037/trm0000294.
[21] B. Fife and E. Wright, "The dimensionality of stigma: a comparison of its impact on the self of persons with HIV/AIDS and Cancer," *Journal of Health and Social Behavior*, vol. 41, pp. 50–67, Apr. 2000, doi: 10.2307/2676360.
[22] O. A. Adesegun *et al.*, "The COVID-19 Crisis in Sub-Saharan Africa: Knowledge, Attitudes, and Practices of the Nigerian Public.," *The American Journal of Tropical Medicine and Hygiene*, vol. 103, no. 5, pp. 1997–2004, Nov. 2020, doi: 10.4269/ajtmh.20-0461.
[23] B. Porter, C. A. Kolaja, T. M. Powell, J. C. Pflieger, V. A. Stander, and R. F. Armenta, "Reducing the length of the Multidimensional Scale of Perceived Social Support," *European Journal of Psychological Assessment*, vol. 36, no. 5, pp. 829–838, 2020, doi: 10.1027/1015-5759/a000553.
[24] S. Abuhammad, K. H. Alzoubi, and O. Khabour, "Fear of COVID-19 and stigmatization towards infected people among Jordanian people," *International Journal of Clinical Practice*, vol. 75, no. 4, p. e13899, Apr. 2021, doi: 10.1111/ijcp.13899.
[25] M. Lazzerini, E. Barbi, A. Apicella, F. Marchetti, F. Cardinale, and G. Trobia, "Delayed access or provision of care in Italy resulting from fear of COVID-19.," *The Lancet. Child & Adolescent Health*, vol. 4, no. 5. pp. e10–e11, May 2020, doi: 10.1016/S2352-4642(20)30108-5.
[26] K. L. Harkness, N. Alavi, S. M. Monroe, G. M. Slavich, I. H. Gotlib, and R. M. Bagby, "Gender differences in life events prior to onset of major depressive disorder: the moderating effect of age," *Journal of Abnormal Psychology*, vol. 119, no. 4, pp. 791–803, Nov. 2010, doi: 10.1037/a0020629.
[27] J. Wang, M. Zhou, and F. Liu, "Reasons for healthcare workers becoming infected with novel coronavirus disease 2019 (COVID-19) in China," *The Journal of Hospital Infection*, vol. 105, no. 1. pp. 100–101, May 2020, doi: 10.1016/j.jhin.2020.03.002.
[28] S. T. Charles, C. A. Reynolds, and M. Gatz, "Age-related differences and change in positive and negative affect over 23 years," *Journal of Personality and Social Psychology*, vol. 80, no. 1, pp. 136–151, Jan. 2001.
[29] Y. Bao, Y. Sun, S. Meng, J. Shi, and L. Lu, "2019-nCoV epidemic: address mental health care to empower society," *Lancet (London, England)*, vol. 395, no. 10224. pp. e37–e38, Feb. 2020, doi: 10.1016/S0140-6736(20)30309-3.
[30] S. R. Paige, J. L. Krieger, and M. L. Stellefson, "The influence of ehealth literacy on perceived trust in online health communication channels and sources," *Journal of Health Communication*, vol. 22, no. 1, pp. 53–65, Jan. 2017, doi: 10.1080/10810730.2016.1250846.
[31] H. C. Nguyen *et al.*, "People with Suspected COVID-19 symptoms were more likely depressed and had lower health-related quality of life: the potential benefit of health literacy," *Journal of Clinical Medicine*, vol. 9, no. 4, Mar. 2020, doi: 10.3390/jcm9040965.
[32] D. Koh *et al.*, "Risk perception and impact of severe acute respiratory syndrome (SARS) on work and personal lives of healthcare workers in Singapore: what can we learn?," *Medical Care*, vol. 43, no. 7, pp. 676–682, Jul. 2005, doi: 10.1097/01.mlr.0000167181.36730.cc.
[33] K. K. Chopra and V. K. Arora, "COVID-19 and social stigma: Role of scientific community," *The Indian Journal of Tuberculosis*, vol. 67, no. 3, pp. 284–285, 2020, doi: 10.1016/j.ijtb.2020.07.012.
[34] R. Ransing *et al.*, "Infectious disease outbreak related stigma and discrimination during the COVID-19 pandemic: Drivers, facilitators, manifestations, and outcomes across the world," *Brain, Behavior, and Immunity*, vol. 89, pp. 555–558, Oct. 2020, doi: 10.1016/j.bbi.2020.07.033.
[35] M. L. Hatzenbuehler, J. C. Phelan, and B. G. Link, "Stigma as a fundamental cause of population health inequalities," *American journal of public health*, vol. 103, no. 5, pp. 813–821, May 2013, doi: 10.2105/AJPH.2012.301069.
[36] Y. Gan, J. Ma, J. Wu, Y. Chen, H. Zhu, and B. J. Hall, "Immediate and delayed psychological effects of province-wide lockdown and personal quarantine during the COVID-19 outbreak in China," *Psychological Medicine*, pp. 1–12, Aug. 2020, doi: 10.1017/S0033291720003116.
[37] S. Sen, J. P. Aguilar, and J. Goldbach, "Does social capital act as a buffer against HIV risk among migrant men in Sub-Saharan Africa?," *Journal of HIV/AIDS & Social Services*, vol. 9, no. 2, pp. 190–211, 2010, doi: 10.1080/15381501003795790.
[38] R. S. Lazarus and S. Folkman, *Stress, appraisal, and coping*. Springer publishing company, 1984.
[39] D. K. Sherman and G. L. Cohen, "The psychology of self-defense: Self-affirmation theory," *Advances in experimental social psychology*, vol. 38, pp. 183–242, 2006, doi: 10.1016/s0065-2601(06)38004-5.
[40] A. Mostafa, W. Sabry, and N. S. Mostafa, "COVID-19-related stigmatization among a sample of Egyptian healthcare workers," *PLoS ONE*, vol. 15, no. 12, p. e0244172, Dec. 2020, doi: 10.1371/journal.pone.0244172.
[41] F. Ornell, J. B. Schuch, A. O. Sordi, and F. H. P. Kessler, "'Pandemic fear' and COVID-19: mental health burden and strategies.," *Revista brasileira de psiquiatria (Sao Paulo, Brazil : 1999)*, vol. 42, no. 3. pp. 232–235, 2020, doi: 10.1590/1516-4446-2020-0008.

BIOGRAPHIES OF AUTHORS

Ernawati Umar is lecture at Department of nursing, faculty of medicine of University of Sultan Ageng Tirtayasa Banten. She can be contacted at email: ernawatiumar0@gmail.com.

Ahmad Darajat is lecture at Department of nursing, faculty of medicine of Stikes Widya Dharma Husada Banten. He can be contacted at email: ahmaddarajat@gmail.com.

Ilma Fidyanti is lecture at Radiology Department of University of Jendral Ahmad Yani Bandung. She can be contacted at email: ilma528@gmail.com.

Lili Amaliah is lecture at Nutrition Department of University of Sultan Ageng Tirtayasa Banten. She can be contacted at email: lili098@gmail.com.