Nurse Media Journal of Nursing
e-ISSN: 2406-8799, p-ISSN: 2087-7811
https://ejournal.undip.ac.id/index.php/medianers
11(3):380-388, December 2021
https://doi.org/10.14710/nmjn.v11i3.36783

ORIGINAL RESEARCH

Factors Influencing Depression among Indonesians during the COVID-19 Outbreak

Rika Sarfika[1], Hema Malini[2], Dewi Eka Putri[1], Andi Buanasari[3], Khatijah Lim Abdullah[4], Windy Freska[1]

[1]*Mental Health and Community Department, Faculty of Nursing Universitas Andalas, Padang, Indonesia*
[2]*Medical-Surgical Nursing Department, Faculty of Nursing, Universitas Andalas, Padang, Indonesia*
[3]*Nursing Department, Faculty of Medicine, Universitas Sam Ratulangi, Manado, Indonesia*
[4]*Nursing Department, School of Medical and Life Sciences, Sunway University, Malaysia*

Article Info

Article History:
Received: 18 February 2021
Revised: 28 November 2021
Accepted: 2 December 2021
Online: 27 December 2021

Keywords:
COVID-19 outbreak; depression; self-rated health; social media exposure

Corresponding Author:
Rika Sarfika
Mental Health and Community Department,
Faculty of Nursing,
Universitas Andalas, Padang, Indonesia
Email:
rikasarfika@nrs.unand.ac.id

Abstract

Background: The 2019 Coronavirus pneumonia disease (COVID-19) has gained intense attention globally, including in Indonesia. The rapid transmission and clinical effects of the virus can cause depression in Indonesian society. However, information on risk factors for depression during COVID-19 in this country is not known.
Purpose: This study aimed to determine the level of depression and identify factors influencing depression in Indonesian society during the COVID-19 outbreak.
Methods: An online-based cross-sectional study was conducted among Indonesian society aged ≥12 years old in April 2020. A total of 1,622 participants from 34 provinces in Indonesia were involved in this study and completed the online questionnaires on demographics, social media exposure, self-rated health, and depression levels with the WHO-Five Well-being Index (WHO-5). Ordinal logistic regression analysis was used to identify the factors associated with depression levels.
Results: Of the total sample analyzed, the overall prevalence of depression levels was 28.5% mild depression, 18.4% moderate depression, and 24.8% severe depression. Social media exposure (SME), age, gender, occupation, and self-rated health (SRH) were significantly influencing depression (p<0.05). The factor that most influenced the level of depression was self-rated health (p=0.0001; OR=2.72).
Conclusion: This study highlights depression in Indonesian society during the COVID-19 pandemic and provides an understanding of the effects of demographics, social media exposure, and self-rated health. The study suggests the importance of implementing a multi-disciplinary approach (e.g., a collaboration between mental health nursing and community nursing) to deal with depression.

How to cite: Sarfika, R., Malini, H., Putri, D. E., Buanasari, A., Abdullah, K. L., & Freska, W. (2021). Factors influencing depression among Indonesians during the COVID-19 Outbreak. *Nurse Media Journal of Nursing, 11*(3), 380-388. https://doi.org/10.14710/nmjn.v11i3.36783

1. Introduction

The 2019 Coronavirus pneumonia disease (COVID-19) has gained intense attention globally, including in Indonesia (Mailani et al., 2021). In early March 2020, this virus had spread to Indonesia. As of June 4, 2020, Indonesia became the 33rd country in the world with the highest number of COVID-19 cases. Until February 3, 2021, Indonesia already ranks 19th globally to have the number of confirmed cases (1,111,671) (Worldometer, 2020). The rapid spread of the virus and the clinical effect have caused panic and mental health problems in society (Zhou, 2020). A large amount of information about the COVID-19 outbreak on social media also triggered this alarm (Ahmed et al., 2020).

Depression is the most common mental health problem in the society during the COVID-19 outbreak. Based on previous research, the prevalence of depression in the society remains high, such as a study in China reported by Gao et al. (2020) showed that around 48.3% of people experienced depression, 22.6% had anxiety, and 19.4% experienced a combination of depression and anxiety. Another study has also shown that the prevalence of depression, as a mental health problem, was 50.7%, while anxiety, insomnia, and other symptoms associated with stress were 44.7%, 36.1%, and 73.4%, respectively (Liu et al., 2020). Furthermore, 16.5% of people in China report moderate to severe symptoms of depression (Wang et al., 2020a).

There are many factors that can influence depression. According to the previous study conducted by Vacaru et al. (2021) in The Netherlands, education and marital status are factors

associated with depression. Scarlett et al., (2021) in France explained that the factors associated with depression symptoms are gender, age, partnership status, chronic disease, food insecurity, region of origin, administrative status, and lack of safety. Wang et al. (2020a) in China revealed that gender, employment status, and education are associated with depression during the initial stage of the COVID-19 epidemic among the general population. Meanwhile, a study conducted by Hosen et al. (2021) in India revealed that marital status was the only characteristic associated with the depression in Indian society during the COVID-19 pandemic.

In Indonesia, the prevalence of psychological problems in the general population during the COVID-19 epidemic was relatively high at 69%, and depression at 67% (PDSKJI, 2020). In turn, this psychological distress can result in dangers that outweigh the consequences of the COVID-19 epidemic itself (Bao et al., 2020). However, information on risk factors for depression in this country is not known. Indonesia is a multiethnic country, and currently, the exposure to social media is very high. So, the level of depression during the COVID-19 epidemic and factors influencing these constructs among Indonesian need to be explored. This study aimed to determine the level of depression and identify factors influencing depression among Indonesian.

2. Methods

2.1 Research design

This study used a cross-sectional design using anonymous online questionnaires.

2.2 Setting and samples

This study was conducted in April 2020. Online questionnaires were distributed to Indonesians aged ≥12 years old using social media platforms such as WhatsApp, Facebook, and Instagram. A snowball sampling technique was employed. We distributed the first survey through student groups, and encouraged each student to continue the survey on social media. This online survey was entirely voluntary and not for commercial purposes. A total of 1,622 respondents took this survey and completed all the questions in the study.

2.3 Measurement and data collection

WHO (Five) Well-Being Index to assess depression (Psychiatric Research Unit, 1998) were used, which consists of five items with positive words reflecting the presence or absence of well-being rather than symptomatology depression. Participants were asked to report the presence of these positive feelings in the past two weeks on a 6-point scale ranging from all-time (5 points) to no time (0 points). The severity of depression is indicated by the number of scores generated; the higher the score indicates the higher depression. Total scores range from 0 to 25. Since "most of the time" and "more than half the time" are thought to mean similar things, we changed this scale to "never" for "a short time", "rarely" for "occasionally", "sometimes" for "less than half the time", "often" for "most of the time and more than half of the time", and "always" for "all the time." Given that no cut-off score has been established in the literature, we divided the possible range of WHO-5 total scores (0-20) into percentiles to provide upper and lower extreme responses with the middle group. Scores ≤11 mean severe depression, 12-13 mean moderate depression, 14-15 mean mild depression, and ≥16 mean minimal or no depression. This instrument has been translated into the Indonesian language using the language service at the Language Center of Universitas Andalas. Validity and reliability tests were carried out on 30 people who had the same inclusion criteria as respondents, namely, those aged ≥12 years old and had access to open the instrument online. This instrument has good internal consistency with a Cronbach's alpha of 0.864.

Previous research has shown that demographic factors such as gender, age, education, marital status, occupation, area of residence (urban or rural), and self-rated health background influence mental health outcomes. However, this relationship varies by place of residence (Gao et al., 2020). For this reason, we provided information on age, gender, religion, education level, marital status, occupation, province, and area of residence of the participants. We also provided information on participants' levels of exposure to information about COVID-19 on social media (less, sometimes, frequently), self-rated health (healthy or good, unwell or sick or not good), and the participant's exposure history with COVID-19 patients (categorized as "ever" and "never").

Participants provided informed consent in the first part of the questionnaire package before filling out the online-based questionnaire via the Google platform during the 11-27 April 2020 period. Teenage participants (aged 12-19) could participate after obtaining consent from the

guardian and ticking agree option on the consent page. All participants were informed about the study objectives, nature, and administrative procedures. A total of 1,622 participants from 34 provinces in Indonesia participated in this survey voluntarily. All participants reported demographic data, social media exposure, self-rated health, and the WHO-5 well-being index. Participants can withdraw from the study at any time without providing any reason. In this study, all participants completed the instrument and no participants withdraw.

2.4 Data analysis

Chi-square tests were used to examine associations between social media exposure, self-rated health, history of exposure to COVID-19, and participant characteristics with levels of depression. Ordinal logistic regression analysis was used to examine the factors associated with depression levels. All analyzes used IBM SPSS 24. Inferences were drawn at a significance level of <0.05.

2.5 Ethical considerations

The Research Ethics Committee of the Faculty of Medicine, Universitas Andalas, Indonesia (reference number 280/KEP/FK/2020) has approved this research.

3. Results

3.1 Characteristics of the respondents and relation with social media exposure

Table 1 provides an overview of participants' characteristics and their relationship with social media exposure. Overall, most participants (78.7%) had frequently exposed to social media, 75.5% were female, 61.3% were aged ≤25 years old, 51.5% had graduated from high school, 52.1% were still students, 67.3% were unmarried, 96.7% were Muslim, 66.7% live in urban areas, 95.7% reported good self-rated health, and 97.8% never had a history of exposure to cases. Social media exposure was related to age, education level, marital status, occupation, and self-rated health (all p<0.05).

Table 1. Characteristics of participants and relation with social media exposure (n=1,622)

Characteristics	f (%)	Social media exposure			*p*-value
		Less f (%)	Sometimes f (%)	Frequently f (%)	
Overall	1622 (100)	60 (3.7)	286 (17.6)	1276 (78.7)	
Gender					
Male	398 (24.5)	18 (4.5)	74 (18.6)	306 (76.9)	0.483
Female	1224 (75.5)	42 (3.4)	212 (17.3)	970 (79.2)	
Age (years)					
≤25 (younger)	994 (61.3)	40 (4.0)	196 (19.7)	758 (76.3)	0.016
26-45 (adults)	540 (33.3)	18 (3.3)	83 (15.4)	439 (81.3)	
≥46 (elderly)	88 (5.4)	2 (2.3)	7 (8.0)	79 (89.9)	
Religion					
Muslim	1569 (96.7)	58 (3.7)	271 (17.3)	1240 (79.0)	0.114
Non-Muslim	53 (3.3)	2 (3.8)	15 (28.3)	36 (67.9)	
Education level					
Middle school	835 (51.5)	38 (4.5)	164 (19.6)	634 (75.8)	0.011
College	787 (48.5)	22 (2.8)	122 (15.5)	642 (82.7)	
Marital status					
Married	531 (32.7)	13 (2.4)	72 (13.6)	446 (84.0)	0.001
Unmarried	1091 (67.3)	47 (4.3)	214 (19.6)	830 (76.1)	
Occupation					
Government employees	329 (20.3)	4 (1.2)	40 (12.2)	285 (86.6)	0.006
Private employees	178 (11.0)	10 (5.6)	33 (18.5)	135 (75.8)	
Housewives	85 (5.2)	4 (4.7)	14 (16.5)	67 (78.8)	
Students	842 (51.9)	34 (4.0)	159 (18.9)	649 (77.1)	
Others	188 (11.6)	8 (4.3)	40 (21.3)	140 (74.5)	
Region of residence					
Sumatera	1301 (80.2)	46 (3.5)	219 (16.8)	1036 (79.6)	0.307
Java	267 (16.5)	13 (4.9)	55 (20.6)	199 (74.5)	
Others	54 (3.3)	1 (1.9)	12 (22.2)	41 (75.9)	

Table 1. Continued

Characteristics	f (%)	Social media exposure			*p*-value
		Less f (%)	Sometimes f (%)	Frequently f (%)	
Area					
Urban	1082 (66.7)	36 (3.3)	192 (17.7)	854 (78.9)	0.531
Rural	540 (33.3)	24 (4.4)	94 (17.4)	422 (78.1)	
Self-rated health					
Good	1553 (95.7)	57 (3.7)	266 (17.1)	1230 (79.2)	0.036
Not good	69 (4.3)	3 (4.3)	20 (29.0)	46 (66.7)	
History of exposure to cases					
Ever	35 (2.2)	3 (8.6)	7 (20.0)	25 (71.4)	0.266
Never	1587 (97.8)	57 (3.6)	279 (17.6)	1251 (78.8)	

Note: p< 0.05. Abbreviation: SME = Social Media Exposure, SRH = Self-Rated Health

3.2 Depression levels

Table 2. Depression levels (n=1,622)

Characteristic	f (%)	Depression				*p*-value
		None f (%)	Mild f (%)	Moderate f (%)	Severe f (%)	
Overall depression levels	1622 (100)	459 (28.3)	462 (28.5)	299 (18.4)	402 (24.8)	
SME						
Less	60 (3.7)	25 (41.7)	17 (28.3)	9 (15.0)	9 (15.0)	0.0001
Sometimes	286 (17.6)	65 (22.7)	60 (21.3)	55 (18.9)	106 (37.1)	
Frequently	1276 (78.7)	369 (28.9)	385 (30.2)	235 (18.4)	287 (22.5)	
Gender						
Male	398 (24.5)	131 (32.9)	126 (31.7)	52 (13.1)	89 (22.4)	0.002
Female	1224 (75.5)	328 (26.8)	337 (27.5)	246 (20.1)	313 (25.6)	
Age (Years)						
≤25 (younger)	994 (61.3)	238 (23.9)	249 (25.1)	207 (20.8)	300 (30.2)	0.0001
26-45 (adults)	540 (33.3)	191 (35.4)	171 (31.7)	85 (15.7)	93 (17.2)	
≥46 (elderly)	88 (5.4)	30 (34.1)	42 (47.7)	7 (8.0)	9 (10.2)	
Religion						
Muslim	1569 (96.7)	442 (28.2)	445 (28.4)	291 (18.5)	391 (24.9)	0.574
Non-Muslim	53 (3.3)	17 (32.1)	18 (34.0)	7 (13.2)	11 (20.8)	
Education						
Middle school	835 (51.5)	199 (23.8)	204 (24.4)	176 (21.1)	256 (30.7)	0.0001
College	787 (48.5)	260 (33.0)	258 (32.8)	123 (15.6)	146 (18.6)	
Marital status						
Married	530 (33.1)	187 (35.2)	183 (34.5)	77 (14.5)	84 (15.8)	0.0001
No married	1072 (66.9)	272 (24.9)	279 (25.6)	222 (20.3)	318 (29.1)	
Occupation						
Government employees	329 (20.3)	112 (34.0)	116 (35.3)	49 (14.9)	52 (15.8)	0.0001
Private employees	178 (11.0)	58 (32.6)	57 (32.0)	34 (19.1)	29 (16.3)	
Housewives	85 (5.2)	21 (24.7)	26 (30.6)	20 (23.5)	18 (21.2)	
Students	842 (51.9)	202 (24.0)	214 (25.4)	173 (20.5)	253 (30.0)	
Others	188 (11.6)	66 (35.1)	49 (26.1)	23 (12.2)	50 (26.6)	
Region of residence						
Sumatera	1301 (80.2)	366 (28.1)	367 (28.2)	236 (18.1)	332 (25.5)	0.460
Java	267 (16.5)	76 (28.5)	76 (28.5)	56 (21.0)	59 (22.1)	
Others	54 (3.3)	17 (31.5)	20 (37.0)	6 (11.1)	11 (20.4)	
Area						
Urban	1082 (66.7)	304 (28.1)	320 (29.6)	199 (18.4)	259 (23.9)	0.533
Rural	540 (33.3)	155 (28.7)	143 (26.5)	99 (18.3)	143 (26.5)	
SRH						
Good	1553 (95.7)	451 (29.0)	447 (28.8)	285 (18.4)	370 (23.8)	0.0001
Not good	69 (4.3)	8 (11.6)	15 (21.7)	14 (20.3)	32 (46.4)	
Exposure to cases						
Ever	35 (2.2)	10 (28.6)	11 (31.4)	5 (14.3)	9 (25.7)	0.931
Never	1587 (97.8)	449 (28.3)	452 (28.5)	293 (18.5)	393 (24.8)	

Note: p<0.05. Abbreviation: SME = Social Media Exposure, SRH = Self-Rated Health

Table 2 shows a description of the depression levels of the respondents and bivariate analysis results using the chi-square test. Most respondents (71.7%) experienced depression during the COVID-19 outbreak. Respondents reporting symptoms of mild depression were 28.5%, moderate depression were 18.4%, and severe depression were 24.8%. Social media exposure (SME), gender, age, education, marital status, occupation, and self-rated health (SRH) were related significantly to depression (p<0.05, respectively).

3.3 Factors influencing depression

Table 3 presents the results of multivariate analysis using the ordinal logistic regression test. The results showed that the factors influencing depression in Indonesian society are SME, gender, SRH, age, and education (p<0.05, respectively). Meanwhile, marital status and employment did not influence depression statistically (p>0.05, respectively). Of these five factors, self-rated health is considered the most influencing factor in respondents' depression levels (OR=2.72). Every 1% increase in the feeling body in good health, will reduce depression by 2.72 times. In other words, respondents who rated themselves in poor health tended to feel more depressed 2.72 times during the COVID-19 outbreak than respondents who rated themselves as healthy. The calculation of the coefficient of determination obtained a value of 0.74. It means the variables SME, gender, SRH, age, and education can explain the depression variable by 74%.

Table 3. Ordinal logistic regression for predicting the factors influencing depression

Predictor	Categories	Step 1			Step 2			Step 3			OR
		Estimate	Wald	*p*	Estimate	Wald	*p*	Estimate	Wald	*p*	
Depression (Y)	None (Y1)	-1.517	16.929	0.0001	-1.273	14.345	0.0001	-1.370	20.553	0.0001	
	Mild (Y2)	-0.244	0.440	0.507	-0.001	0.000	0.998	-0.100	0.111	0.739	
	Moderate (Y3)	0.648	3.103	0.078	0.889	7.018	0.008	0.789	6.866	0.009	
SME (X1)	Less (X1a)	-0.620	6.430	0.011	-0.606	6.167	0.013	-0.602	6.101	0.014	1.64
	Sometimes (X1b)	0.500	17.386	0.0001	0.505	17.753	0.0001	0.506	17.939	0.0001	1.38
Gender (X2)	Male (X2)	-0.233	4.689	0.030	-0.232	4.623	0.032	-0.266	6.368	0.012	0.72
SRH (X3)	Good (X3)	-0.997	18.585	0.0001	-0.989	18.325	0.0001	-1.000	18.731	0.0001	2.72
Age (X4)	Younger (X4a)	0.474	2.785	0.095	0.698	7.884	0.005	0.629	7.897	0.005	1.71
	Adults (X4b)	0.122	0.327	0.567	0.157	0.545	0.460	0.177	0.705	0.401	0.48
Education (X5)	Middle school (X5)	0.269	3.569	0.059	-0.267	3.520	0.061	0.267	4.552	0.033	0.73
Occupation (X6)	Government employees (X6a)	0.123	0.445	0.505	0.069	0.144	0.704				
	Private employees (X6b)	0.042	0.046	0.830	0.040	0.043	0.836				
	Housewife (X6c)	0.504	3.745	0.053	0.400	2.525	0.112				
	Students (X6d)	-0.002	0.000	0.991	0.008	0.002	0.965				
MS (X5)	Married (X5)	-0.297	2.568	0.108							
Pseudo R^2			0.077			0.076			0.074		
p			0.014			0.007			0.005		

Note: p< 0.05. Abbreviation: SME = Social Media Exposure, MS = Marital Status, SRH = Self-Rated Health

4. Discussion

This study aimed to determine the level of depression and identify factors influencing depression in Indonesian society during the COVID-19 outbreak. Based on the level of depression, most Indonesians in this study (71.7%) experienced symptoms of depression during the COVID-19 outbreak, the others experienced mild depression (28.5%), moderate depression (18.4%), and severe depression (24.8%). This prevalence is higher than that in a previous study conducted by Scarlett et al. (2021) in France on people living in shelters, namely, 28% had mild depression, 17% had moderate depression, 10% had moderately severe depression, and 3% had severe depression. This high rate of depression may be due to unclear information about COVID-19. The data were taken after six weeks from the first case that appeared in Indonesia. Large-scale distance limitation regulations make people feel isolated and carry out all activities from home that make the body lack sunlight, thereby reducing serotonin levels that lead to emotional disorders, such as depression (Huang & Zhao, 2020). The quarantine condition is also associated with feelings of loneliness from being separated from others, feelings of guilt, fear, and helplessness (Brooks et al., 2020). Besides that, the number of deaths due to COVID-19 in Indonesia is the highest in Asia (Indonesia's COVID-19 Task Force, 2020). Thus, people's fear is very natural when they see high rates of infection and death. News reports about the number of deaths each day are informed

through mass media. According to Ahmed (2020), there is a correlation between higher death rates with higher levels of depression during outbreaks COVID-19.

This study results found that of the ten factors examining depression, seven factors had a significant correlation with depression (SME, gender, age, education, marital status, occupation, and SRH). SRH is considered to be the most influencing factor in respondents' depression levels. Respondents who rated themselves in poor health tended to feel more depressed 2.72 times during the COVID-19 outbreak than those who rated themselves as healthy. This result is in line with a previous study that poor or feeble self-rated health is significantly associated with higher levels of stress, anxiety, and depression than those whose health was rated as good or very good during the COVID-19 outbreak (Wang et al., 2020a). Beck's (1967) cognitive theory states that depression arises from malfunctioning information processing due to distorted thinking. This theory states that people who adopt negative thinking have a higher risk of developing depression when faced with stressful or disappointing life experiences. In the face of new life stressors, these schemes are activated and generated automatically and false-negative thoughts about oneself, the environment, and the future (Weeland et al., 2017).

This study found that 78.7% of respondents had accessed information related to COVID-19 through social media, and about 22.5% of respondents admitted to experiencing severe depression symptoms. Social media such as television programs are ineffective in eliminating panic and depression when information related to COVID-19 was disseminated through talkshows that do not use legitimate sources, such as medical experts. Sometimes social media are also used in political propaganda. Information regarding COVID-19 was discussed by senior journalists and politicians who did not touch on the essence of the COVID-19 outbreak but rather criticized the political aspects. This information does not raise public awareness about the COVID-19 outbreak (Bilal et al., 2020).

This study also found that women experienced more moderate and severe depression. Meanwhile, men experience mild depression or even minimal depression. Women are three times more likely to experience depression than men (Wang et al., 2020a). Previous research in Italy also confirmed that most female respondents experience depression from average to very high during the COVID-19 outbreak (Mazza et al., 2020). Biologically, depression occurs in women due to fluctuations in the hormone estrogen. In men, it appears that androgen receptors can provide protection, for example, in the hippocampus associated with depression. Differences in regulating the hormone estrogen in the male and female brains are also factors in causing gender differences in depression (Albert, 2015). Besides, choosing a coping strategy can also be a predictor of depression. Women tend to react to stressors by blaming themselves and reframing less positively (lack of ability to see situations from a different perspective) than men. Emotion-focused coping was also more likely to be chosen by women as a coping strategy than men who used problem-focused coping more frequently, making them more vulnerable (Kelly et al., 2008).

The results of this study also indicated that adults (26-45 years) and adolescents (≤25 years) were more likely to be diagnosed with moderate and severe depression than those with old age (≥46 years). The higher percentage of depression in young adults may be due to this age being the productive age, making them have to leave the house to work and allow contact with public places, so there is concern about infection (Mazza et al., 2020). Also, at this age, people tend to use social media frequently so that they are more exposed to COVID-19 (Wang et al., 2020b). It was closely related to the incidence of depression in young adults (Lin et al., 2016).

Our findings also found that respondents with a lower education background tend to experience more depression than respondents with higher education. These results differ from previous studies in Italy, which did not find an association between educational background and depressive symptoms (Mazza et al., 2020). Meanwhile, a study in China showed the opposite; psychological distress occurred more in people with higher education, which may be because they have a heightened self-awareness of their health (Qiu et al., 2020). Our results show that people with higher education have less depression than those with lower education, even though they are more exposed to news about COVID-19 on social media. According to Stewart et al. (2004), education is the initial capital in cognitive development, where cognitive can be a mediator between an event and mood (Stewart et al., 2004). Thus, people with low levels of education have less cognitive abilities in accepting an event, so they are more prone to depression. Meanwhile, people with higher education have better cognitive skills and self-efficacy in receiving

information, which helps them form healthier coping strategies in overcoming problems (Bauldry, 2015).

Respondents who were married tend to be higher depressed than those who are not married. These results contrast with a previous study on depression during COVID-19 in several countries that did not show a relationship between marital status and the incidence of depression (Özdin & Özdin, 2020). This difference might be due to the relationship between marital status and depression and is influenced by age and gender variables. As explained earlier, depression is lower in female respondents who were single, widowed, or separated than married. Still, the risk of depression increased with age in single respondents and a common-law relationship. Unmarried respondents usually have broader relationships, so they have more support systems, while married couples consider their partners as the primary support system.

Homemakers and students tend to be more depressed than the government and private employees during the COVID-19 pandemic. Around 52.1% of respondents in this study were students and detected around 29.9% have severe depression. This may be due to concerns over schools' closure, making students feel uncertain and worried about the negative impact of their academic progress. Besides that, no more extended access to school facilities such as mental health support, peer-group support, and face-to-face services (Lee, 2020). Besides, students still seem immature and lack of resources to face the pandemic (González-Sanguino et al., 2020). Depression associated with work as a housewife appears to be caused by housewife having to assume the role of primary caregiver for their family and balancing household work during the COVID-19 pandemic. This stress may be influenced by financial independence, social status, and life satisfaction, which is more felt by working women and causes better stress tolerance and adjustment than those who do not work. Respondents with erratic jobs, such as daily workers, reported severe depression symptoms. During the "stay at home" policy, daily workers and traders do not have the regular income, resulting in material hardship in meeting their daily needs and paying bills, which creates a depressed feeling. This finding in line with a previous study that material hardship is positively associated with an elevated risk for depression (Heflin & Iceland, 2009). In other words, depression in the community because of the COVID-19 outbreak problem and the material hardship of the COVID-19 outbreak effect can also directly affect depression in the community.

5. Implications and limitations

This study has implications for nursing and health policy to maintain the mental health of Indonesian society during the COVID-19. Understanding the factors influencing depression among Indonesian during the COVID-19 means that implementing a multidisciplinary and multi-faceted approach is essential. For example, a collaboration between mental health nursing and community nursing, forming multidisciplinary mental health teams that provide community-based mental health services, using online counseling platforms, and screening mental health especially in susceptible groups, are necessary.

This study has limitations that warrant attention when interpreting and using the results. First, establishing a causal relationship between key variables may not be possible considering the cross-sectional research design of the study. Second, the research was conducted online, which is suitable for rapid assessment during an outbreak. However, representativeness cannot be guaranteed such as were mostly young adult age groups, which may have influenced the results.

6. Conclusion

In conclusion, our findings found that most Indonesians had symptoms of depression during the COVID-19 outbreak. This study showed that the pandemic had a more significant depressive effect on women, homemakers, frequent social media exposure, young adults, and poor self-rated health. Therefore, it is essential to consider the characteristics of this group in developing interventions. Also, psychological counseling telephone lines are open to the public and are rapidly becoming a necessary mechanism for dealing with psychological problems. Collaboration between mental health nurses and community nurses may help educate the public to use media wisely. Interventions such as forming a multidisciplinary mental health team, using online counseling platforms, and mental health checks, especially for vulnerable groups, may need to be implemented immediately to prevent further psychological effects. Also, further research is needed to explore what kind of interventions are needed to reduce depression in the community.

Acknowledgment

We are very grateful to the Faculty of Nursing Universitas Andalas that provide funding for this research. We are also thankful to all Indonesian respondents who participated in this study.

Author contribution

All authors were involved sufficiently in the concept, design, data analysis, writing, and revision of the manuscript.

Conflict of interest

The authors declare no conflicts of interest.

References

Ahmed, S. S. (2020). The Coronavirus Disease 2019 (COVID-19): A review. *Journal of Advances in Medicine and Medical Research*, *32*(4), 1–9. https://doi.org/10.9734/jammr/2020/v32i430393

Ahmed, Z., Ahmed, O., Aibao, Z., Hanbin, S., Siyu, L., & Ahmad, A. (2020). Epidemic of COVID-19 in China and associated psychological problems. *Asian Journal of Psychiatry*, *51*, 102092. https://doi.org/https://doi.org/10.1016/j.ajp.2020.102092

Albert, P. R. (2015). Why is depression more prevalent in women? *Journal of Psychiatry and Neuroscience*, *40*(4), 219–221. https://doi.org/10.1503/jpn.150205

Bao, Y., Sun, Y., Meng, S., Shi, J., & Lu, L. (2020). 2019-nCoV epidemic: Address mental health care to empower society. *The Lancet*, *395*(10224), e37–e38. https://doi.org/10.1016/S0140-6736(20)30309-3

Bauldry, S. (2015). Variation in the protective effect of higher education against depression. *Society and Mental Health*, *5*(2), 145–161. https://doi.org/10.1177/2156869314564399

Beck, A. T. (1967). *Depression: Clinical, experimental, and theoretical aspects*. Harper & Row.

Bilal, Latif, F., Bashir, M. F., Komal, B., & Tan, D. (2020). Role of electronic media in mitigating the psychological impacts of Novel Coronavirus (COVID-19). *Psychiatry Research*, *289*, 113041. https://doi.org/10.1016/j.psychres.2020.113041

Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *The Lancet*, *395*(10227), 912–920. https://doi.org/10.1016/S0140-6736(20)30460-8

Gao, J., Zheng, P., Jia, Y., Chen, H., Mao, Y., Chen, S., Wang, Y., Fu, H., & Dai, J. (2020). Mental health problems and social media exposure during COVID-19 outbreak. *PLoS ONE*, *15*(4), 1–10. https://doi.org/10.1371/journal.pone.0231924

González-Sanguino, C., Ausín, B., Ángel, M., Saiz, J., Lopez-Gomez, A., Ugidos, C., & Munoz, M. (2020). Mental health consequences during the initial stage of the 2020 Coronavirus Pandemic (COVID-19) in Spain. *Brain, Behavior, and Immunity*, *87*, 172–176. https://doi.org/10.1016/j.bbi.2020.05.040

Heflin, C. M., & Iceland, J. (2009). Poverty, material hardship and depression. *Social Science Quarterly*, *90*(5), 1051–1071. https://doi.org/10.1111/j.1540-6237.2009.00645.x

Hosen, I., al Mamun, F., & Mamun, M. A. (2021). The role of sociodemographics, behavioral factors, and internet use behaviors in students' psychological health amid COVID-19 pandemic in Bangladesh. *Health Science Reports*, *4*(4), e398 https://doi.org/10.1002/hsr2.398

Huang, Y., & Zhao, N. (2020). Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: A web-based cross-sectional survey. *Psychiatry Research*, *288*, 112954. https://doi.org/10.1016/j.psychres.2020.112954

Indonesia's COVID-19 Task Force. (2020). *Update data COVID-19 [COVID-19 updated data]*. BNPB Indonesia. https://doi.org/https://www.bnpb.go.id/

Kelly, M. M., Tyrka, A. R., Price, L. H., & Carpenter, L. L. (2008). Sex differences in the use of coping strategies: Predictors of anxiety and depressive symptoms. *Depression and Anxiety*, *25*(10), 839–846. https://doi.org/10.1002/da.20341.

Lee, J. (2020). Mental health effects of school closures during COVID-19. *The Lancet Child and Adolescent Health*, *4*(6), 421. https://doi.org/10.1016/S2352-4642(20)30109-7

Lin, L. Y., Sidani, J. E., Shensa, A., Radovic, A., Miller, E., Colditz, J., Hoffman, B., Giles, L. M., & Primack, B. A. (2016). Association between social media use and depression among U.S. young adults. *Depression and Anxiety*, *33*(4), 323–331. https://doi.org/10.1002/da.22466.

Liu, S., Yang, L., Zhang, C., Xiang, Y.-T., Liu, Z., Hu, S., & Zhang, B. (2020). Online mental health services in China during the COVID-19 Outbreak. *The Lancet Psychiatry*, *7*(4), e17–e18. https://doi.org/10.1016/S2215-0366(20)30077-8

Mailani, F., Huriani, E., Muthia, R., & Sarfika, R. (2021). Nurses' intention to work during the COVID-19 outbreak in West Sumatra, Indonesia. *Nurse Media Journal of Nursing*, *11*(1), 50–60. https://doi.org/10.14710/nmjn.v11i1.34093

Mazza, C., Ricci, E., Biondi, S., Colasanti, M., Ferracuti, S., Napoli, C., & Roma, P. (2020). A nationwide survey of psychological distress among Italian people during the COVID-19 pandemic: Immediate psychological responses and associated factors. *Environmental Research and Public Health*, *17*(9), 3165. https://doi.org/10.3390/ijerph17093165

Özdin, S., & Özdin, Ş. B. (2020). Levels and predictors of anxiety, depression and health anxiety during COVID-19 pandemic in Turkish society: The importance of gender. *International Journal of Social Psychiatry*, *66*(5), 504–511. https://doi.org/10.1177/0020764020927051

PDSKJI. (2020). *Swaperiksa masalah psikologis (Self-check for psychological problems)*. Perhimpunan Dokter Spesialis Kedokteran Jiwa Indonesia (Indonesian Society of Mental Medicine Specialists). http://www.pdskji.org/home

Psychiatric Research Unit. (1998). WHO (five) well-being index (1998 version). In *WHO collaborating centre in mental health*. World Health Organization. https://www.psykiatri-regionh.dk/who-5/who-5-questionnaires/Pages/default.aspx

Qiu, J., Shen, B., Zhao, M., Wang, Z., Xie, B., & Xu, Y. (2020). A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: Implications and policy recommendations. *General Psychiatry*, *33*(2), 1–4. https://doi.org/10.1136/gpsych-2020-100213

Scarlett, H., Davisse-Paturet, C., Longchamps, C., Aarbaoui, T. E., Allaire, C., Colleville, A.-C., Convence-Arulthas, M., Crouzet, L., Ducarroz, S., & Melchior, M. (2021). Depression during the COVID-19 pandemic amongst residents of homeless shelters in France. *Journal of Affective Disorders Reports*, *6,* 100243. https://doi.org/10.1016/j.jadr.2021.100243

Stewart, D. E., Rolfe, D. E., & Robertson, E. (2004). Depression, estrogen, and the women's health initiative. *Psychosomatics*, *45*(5), 445–447. https://doi.org/10.1176/appi.psy.45.5.445

Vacaru, S., Beijers, R., Browne, P. D., Cloin, M., van Bakel, H., van den Heuvel, M. I., & de Weerth, C. (2021). The risk and protective factors of heightened prenatal anxiety and depression during the COVID-19 lockdown. *Scientific Reports*, *11*(1), 1–11. https://doi.org/10.1038/s41598-021-99662-6

Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020a). Immediate psychological responses and associated factors during the initial stage of the 2019 Coronavirus Disease (COVID-19) epidemic among the general population in China. *International Journal of Environmental Research and Public Health*, *17*(5), 1729. https://doi.org/10.3390/ijerph17051729

Wang, G., Zhang, Y., Zhao, J., Zhang, J., & Jiang, F. (2020b). Mitigate the effects of home confinement on children during the COVID-19 Outbreak. *The Lancet*, *395*(10228), 945–947. https://doi.org/10.1016/S0140-6736(20)30547-X

Weeland, M. M., Nijhof, K. S., Otten, R., Vermaes, I. P. R., & Buitelaar, J. K. (2017). Beck's cognitive theory and the response style theory of depression in adolescents with and without mild to borderline intellectual disability. *Research in Developmental Disabilities*, *69*, 39–48. https://doi.org/10.1016/j.ridd.2017.07.015

Worldometer. (2020). *COVID-19 Coronavirus pandemic*. Worldometer. https://www.worldometers.info/coronavirus/

Zhou, X. (2020). Psychological crisis interventions in Sichuan province during the 2019 Novel Coronavirus outbreak. *Psychiatry Research*, *286*, 112895. https://doi.org/https://doi.org/10.1016/j.psychres.2020.112895