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Factors of Anxiety Symptoms Due to Large-Scale Social Restriction Policy During the COVID-19 Pandemic in Indonesia

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Abstract

The Indonesian Government took some preventive measures to slow the spread of the COVID-19 virus, including social restrictions and encouraging individuals to stay at home and avoid needless gatherings. This study aimed to identify factors related to anxiety symptoms during large-scale social restrictions. This study employed a cross-sectional design using the snowball technique in an online survey. A total of 788 respondents comprised the target population to detect the smallest effect size (Cohen's dz = .2), with the level of power of 0.8 using G*Power 3.1, specifically targeting adults aged over 18 years. Out of 1,194 people who took part in the survey, 847 completed all the answers. The findings revealed that 42% of participants experienced feelings of nervousness, anxiety, or agitation, and 42.5% became easily agitated during the COVID-19 pandemic. Nonetheless, 81.7% of those surveyed reported being able to manage their concerns, and 80.7% had good time management during the COVID-19 pandemic. Descriptive analysis showed that sex, residence, marital status, number of children, occupational status, being infected by COVID-19, health concern, and time management had a relationship with anxiety symptoms.

Keywords: anxiety, COVID-19, factors, large-scale social restriction

Introduction

The coronavirus disease 2019 (COVID-19) pandemic had a drastic impact on everyday life, and the reactions varied across different countries. Most countries are facing public health, social, and economic crises, although the scope, length, and evolution of these crises over time are unknown. However, the impact of the crisis will be severe and long-lasting. The World Health Organization (WHO) Regional Office for Africa, in a 2020 report, had projected that between 83,000 and 190,000 people in Africa might die from COVID-19 and that 29 to 44 million could become infected within the first year if containment efforts were unsuccessful. The report also cautioned that the pandemic could turn into a prolonged crisis lasting several years.[1]

The government in many countries has implemented containment measures, including quarantine. Quarantine has been historically used in public health to separate and restrict the movement of people exposed to a contagious disease, allowing them to be monitored to see if they become sick, thereby reducing the risk of infecting others.[2] Examples of quarantine measures used include quarantines in China and Canada during the 2003 Severe Acute Respiratory Syndrome (SARS) and some cities in Western African countries during the Ebola outbreak in 2014.[3]

Since March 2, 2020, when the first case of COVID-19 was reported in Indonesia, the government has announced preventive measures to contain the spread of the virus.[4] Additionally, several provinces implemented large-scale social restrictions (LSSR) after receiving a letter of authorization from the Indonesian Ministry of Health.[5] Travel restrictions

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were put in place, public events were canceled, schools were closed, and people were urged to stay at home and avoid needless crowds.[6] As a result, the Indonesians and the people worldwide were obligated to stay at home for the last two months.

In addition, studies conducted on similar health situations have shown the emotional, psychological, and behavioral impact of quarantine and confinement on people. Quarantine has been linked with post-traumatic stress reactions, elevated levels of anxiety, confusion, anger, feelings of uncertainty, rejection, and isolation.[3] The same condition also happened in Indonesia, where several factors, such as age and sex, were associated with anxiety during the initial phase of the COVID-19 pandemic.[7] From another study, it is found that during the COVID-19 pandemic in Indonesia, school-age community experienced higher anxiety compared with the working-age community, and people living on the island of Java have a greater incidence of anxiety compared with people living outside Java.[8]

Another study pointed out that anxiety is a feeling of unease that comes with both emotional and physical reactions, often triggered by the fear of something going wrong.[8] This study aimed to identify which single factors are associated with anxiety symptoms related to the LSSR policy. This study hypothesized that there was a relationship between sociodemographic factors and a person's time management when experiencing lockdown with anxiety symptoms. The findings from this study could serve as a starting point for understanding the factors linked to anxiety. They could help guide the creation of public policies that provide better psychosocial support during future pandemics.

Method

This study was part of a multi-country study on Personal and Family Coping with COVID-19 in the Global South. Indonesia was one of the 22 participating countries. The study design was cross-sectional, utilizing an online survey distributed throughout Indonesia from June to July 2020. G*Power 3.1 was used for the a priori power analysis. A total sample of 788 participants was required to detect the smallest effect size (Cohen's dz = .2) and achieved a generally accepted minimum level of power of 0.80. Participants were restricted to Indonesian adults aged 18 years and older who lived in Indonesia during the LSSR period in the COVID-19 pandemic. In general, the study employed the snowball technique with an online web-based survey design and distributed through social media and communications platforms (mainly WhatsApp). Each respondent was asked to give their informed consent before filling out the questionnaire. A total of 1,194 adults participated in the survey, with 847 completing all questions. Respondents had the option to choose not to answer or mark questions as not applicable.

Furthermore, data on respondents' sociodemographic information, perception related to COVID-19, and anxiety level for the last two weeks during the LSSR period in the COVID-19 pandemic in Indonesia were collected between June 12, 2020, and July 13, 2020. Demographic information included age, sex, marital status, number of children, education, and occupational status. Education was classified into two categories: uneducated-secondary (elementary, junior, or high school) and higher education (post-secondary, such as diploma, bachelor, master, or doctorate). Residence consisted of people living in urban and rural areas, classified based on Statistic Indonesia. Socioeconomic status was classified into high (above the regional minimum wage), middle (equal to the regional minimum wage), and low (below the regional minimum wage).

Information regarding COVID-19 included whether they have been infected by the COVID-19, someone in the household infected by COVID-19, someone close to them infected by COVID-19, someone close to them died from COVID-19, their concern about supporting family financially because of COVID-19, respondents' concern about their and family members health status, and their time management during COVID-19 situation. The answer was coded as 0 = No, 1 = Not sure, and 2 = Yes, as it represented their perception and opinion regarding COVID-19 information.[9] This instrument was validated in previous studies with Cronbach's alpha of .86 (Botswana sample), $\alpha = .85$ (Zimbabwean data), $\alpha = .84$ (Ghanaian data), and $\alpha = .88$ (Malaysian data), as well as ($\alpha > .7$) for the selected demographic subgroups.[9,10]

The level of anxiety was measured using the Generalized Anxiety Disorder (GAD-7), a self-assessment tool for anxiety symptoms screening among adults aged 18 to 95 years old.[11] The Indonesian version of GAD-7 was translated by Budikayanti *et al.*,[12] and was both valid and reliable with Cronbach's alpha of .86. The questionnaire included seven items asking how often participants experienced anxiety symptoms over the past two weeks, using a 4-point scale ranging from 0 (not at all), 1 (several days), 2 (more than half the days), and 3 (nearly every day). For bivariate analysis, the full answer for all indicators was categorized into two categories: "YES" indicates having anxiety symptoms with a score greater than 9, and "NO" indicates having no anxiety symptoms with a score of 0–9. The written informed consent was obtained from the respondents. Respondents could answer "not applicable" or "prefer not to answer," and these

responses would not be included in the bivariate data analysis. Additionally, the bivariate analysis employed the Chi-square test using the licensed SPSS statistical software version 24.

Results

The respondents were mostly female (66.4%), aged 18-34 years (67.5%), living in an urban area (79%), single (53.2%), and had a low income, below the regional wage standard (62%). The psychometric results revealed that 42.2% of participants experienced feelings of nervousness, anxiety, or agitation; 38.8% could not seem to stop worrying; 39.5% worried excessively; 38.2% found it difficult to unwind; 56.7% were agitated and found it difficult to remain still; 42.9% were easily agitated or agitated; and 38.8% were afraid that something negative might occur (Table 1). The respondents experienced all of those feelings for more than half of the day, almost every day.

The respondents stated that they could control their feelings of worry, anxiety, and fear during the COVID-19 pandemic (81.7%). Moreover, 80.7% of respondents felt they could manage time well during the pandemic (Table 2). The respondents found that 95.5% of them did not drink alcohol during the implementation of the LSSR policy in the COVID-19 pandemic. It also showed that 25.9% felt motivated by most things they did, 27.8% found something to do or watch to keep their interest, 61.5% disagreed with sitting around doing nothing, and 24.5% did something exciting, even dangerous.

Table 1. Symptoms of Generalized Anxiety Disorders

Indicators	%	n
Feeling nervous, anxious, or on edge		
Not at all sure	14.0	167
Several days	18.7	223
Over half the days	42.0	501
Nearly every day	24.7	295
Not applicable or not answered	0,7	8
Not being able to stop or control worrying		
Not at all sure	10.0	119
Several days	14.7	176
Over half the days	36.1	431
Nearly every day	38.5	460
Not applicable	0.7	8
Worrying too much about different things		
Not at all sure	14.0	167
Several days	16.1	192
Over half the days	38.9	465
Nearly every day	29.6	354
Not applicable or not answered	1.3	16
Trouble relaxing		
Not at all sure	11.1	132
Several days	13.3	159
Over half the days	37.9	453
Nearly every day	36.9	441
Not Applicable or not answered	0.8	9
Being so restless that it is hard to sit still		
Not at all sure	7.5	89
Several days	9.0	107
Over half the days	26.5	316
Nearly every day	56.2	671
Not applicable or not answered	0.9	11
Becoming easily annoyed or irritable		
Not at all sure	8.0	96
Several days	13.7	163
Over half the days	34.8	416
Nearly every day	42.5	508
Not applicable or not answered	0.9	11
Feeling afraid as if something awful might happen		
Not at all sure	15.5	183
Several days	18.8	222
Over half the days	38.8	459
Nearly every day	27.0	320
Not applicable or not answered	0.8	10

Table 2. Participants' Time Management During the Implementation of Large-Scale Social Restriction Policy

Indicators	%	n
Have a drink containing alcohol		
Never	95.5	1,136
Monthly or less	3.3	39
2-4 times a month	1.0	12
2-3 times a week	0.2	2
4 or more times a week	0.1	1
Feel motivated by most things that I do		
Disagree	50.2	596
Neutral	23.9	284
Agree	25.9	308
Find something to do or watch to keep interested		
Disagree	41.2	462
Neutral	31.0	347
Agree	27.8	312
I just sit around doing nothing		
Disagree	61.5	732
Neutral	12.5	149
Agree	26.0	310
Unless I am doing something exciting, even dangerous, I feel half dead and dull		
Disagree	54.6	650
Neutral	20.9	249
Agree	24.5	295
Do you think you are using your time well during the COVID-19 situation?		
Yes	80.7	683
No	19.3	164
Not applicable or prefer not to say	29.1	347
Do you think you are managing your contacts with other people well during the COVID-19 situation?		
Yes	88.3	1,056
No	11.4	136
Not Applicable or prefer not to say	0.1	2
Do you think you are controlling your worries well during the COVID-19 situation?		
Yes	81.7	975
No	18.3	216
Not applicable or prefer not to say	0.1	3

Based on the bivariate analysis, each independent variable was associated with anxiety symptoms, including sex, residence, marital status, number of children, occupational status, infection by COVID-19, health concern, and time usage management. Males were more likely to experience anxiety symptoms than females, 1,446 times (Table 3). Respondents living in urban areas, single, and working were also more likely to experience anxiety. Married respondents, especially those with children, did not cope with anxiety as well as other groups. The participants who were not sure about their COVID-19 infection status, and someone related to them, had an association with anxiety symptoms. Respondent who were concerned about their family and their health status had a relationship with anxiety. Furthermore, respondents who did not use their time well were 1.63 times more likely to have anxiety symptoms than those who made good use of their time.

Table 3. Bivariate Analysis

Variables	Anxiety Symptoms							
	Yes		No		Total		p-value	OR (CI 95%)
	n	%	n	%	n	%		
Sex [a,b]								
Female	421	68.7	141	60.3	562	66.4		1
Male	192	31.3	93	39.7	285	33.6	0.025*	1.44 (1.058-1.977)
Age [b]								
18-34	397	64.8	175	74.8	572	67.5		1
35-54	192	31.3	55	23.5	247	29.2	0.076	2.64 (0.904-7.736)
≥55	24	3.9	4	1.7	28	3.3	0.335	1.71 (0.572-5.164)
Residence [a,b]								
Rural	143	23.3	35	15.0	178	21.0		1
Urban	470	76.7	199	85.0	669	79.0	0.01*	1.73 (1.154-2.594)
Marital status [a,b]								
Married	306	49.9	90	38.5	396	46.8		1
Single	307	50.1	144	61.5	451	53.2	0.004*	1.59 (1.173-2.168)
Number of Children [a,b]								
No Children	322	52.5	153	65.3	475	56.1		1
1-2	197	32.1	60	25.6	257	30.3	0.012*	0.64 (0.453-0.907)
>2	94	15.3	21	9.0	115	13.6	0.004*	0.47 (0.282-0.784)
Education [b]								
Uneducated–secondary	184	30.0	67	28.6	251	29.6		1
Post-secondary–higher education	429	70.0	167	71.4	596	70.4	0.756	1.06 (0.767-1.490)
Occupational status [a,b]								
Unemployed	360	58.7	159	67.9	519	61.3		1
Employed	253	41.3	75	32.1	328	38.7	0.017*	0.67 (0.488-0.923)
Income [b]								
High	51	8.3	26	11.1	77	9.1		1
Middle	178	29.0	67	28.6	245	28.9	0.279	0.73 (0.426-1.279)
Low	384	62.6	141	60.3	525	62.0	0.207	0.72 (0.432-1.2)
Infected by COVID-19 [a,b]								
No	532	86.8	188	80.3	720	85.0		1
Yes	3	0.5	0	0	3	0.4	0.999	-
Unsure	78	12.7	46	19.7	124	14.6	0.012*	1.66 (1.118-2.491)
Someone in the household infected by COVID-19 [a,b]								
No	555	90.5	198	84.6	753	88.9		1
Yes	2	0.3	2	0.9	4	0.5	0.302	2.80 (0.392-20.033)
Unsure	56	9.1	34	14.5	90	10.6	0.022*	1.70 (1.079-2.685)
Someone close to you infected by COVID-19 [a,b]								
No	511	83.4	176	75.2	687	81.1		1
Yes	49	8.0	20	8.5	69	8.1	0.543	1.18 (0.685-2.049)
Unsure	53	8.6	38	16.2	91	10.7	0.001*	2.08 (1.327-3.266)
Someone close to you died from COVID-19 [b]								
No	582	94.9	216	92.3	798	94.2		1
Yes	16	2.6	6	2.6	22	2.6	0.983	1.01 (0.390-2.616)
Unsure	15	2.4	12	5.1	27	3.2	0.052	2.15 (0.993-4.679)
Concerned about your own health and health of your family [a,b]								
No	0	0	3	1.3	3	0.4		1
Yes	613	100	231	98.7	844	99.6	0.021*	3.65 (3.273-4.078)
Concerned about supporting family financially because of COVID-19 [b]								
No	223	36.4	69	29.5	292	34.5		1
Yes	334	54.5	140	59.8	474	56.0	0.075	1.35 (0.970-1.893)
Unsure	56	9.1	25	10.7	81	9.6	0.186	1.44 (0.838-2.484)
Do you consume alcohol during COVID-19? [b]								
No	591	96.4	223	95.3	814	96.1		1
Yes	22	3.6	11	4.7	33	3.9	0.583	1.32 (0.632-2.777)
Do you think you are using your time well during COVID-19 situation? [a,b]								
Yes	508	83.0	175	74.8	683	80.7		
No	105	17.0	59	25.2	164	19.3	0.01*	1.63 (1.135-2.343)

Notes: [a]p-value <0.05; [b]Participants that answered "N/A" or "prefer not to answer" were not included in the bivariate data analysis. Thus, the total number of respondents who completed the survey was 847

Discussion

This study used an online survey to make it easier and practical for participants to join. However, there were some limitations, such as limited eligibility and relying on voluntary participation, which might have caused some bias in the results. Most respondents were female, aged between 18 and 34 years, living in urban areas, had completed higher education, were unemployed, and had low incomes. Similar findings have also been seen in other online studies in Indonesia that looked at the pandemic's impact on mental health, which had a majority of female participants, a younger

age, and completed higher education.[7,8] On the other hand, based on the National Census in 2020, 56.7% of the Indonesian population lived in urban areas, 70% were of productive age (15-64 years old), the number of males and females was roughly the same, 67% were employed, and only 10.2% had completed higher education.[13,14] Therefore, the findings from this study might not fully reflect the overall Indonesian population.

This study found that employed participants were more likely to experience anxiety. This is different from other studies in Indonesia, where unemployed participants had a higher chance of developing anxiety during the LSSR period in the COVID-19 pandemic compared to those who had a job.[7,8] The findings from another study indicated that the overall prevalence of Post-Traumatic Stress Disorder among healthcare workers following the SARS epidemic was 14% (95% CI: 10–17%), with higher rates during the epidemic (16%) and within the first six months post-outbreak (19%). Notably, symptoms persisted in 8% of healthcare workers even after one year, and 10% remained affected at the three-year follow-up.[15] This study's findings provided a deeper understanding of anxiety employed by respondents to manage their concerns during the pandemic. The source of the anxiety problem was based on the Generalized Anxiety Disorder 7-item instrument.[16] Additionally, occupational status and monthly income were also factors related to anxiety, according to the study in Wuhan City, China.[17] Another study in Turkey stated that 89 out of 250 respondents experienced anxiety because they were laid off during the COVID-19 pandemic, meaning that occupational status was one of the factors related to anxiety.[18]

This study found that respondents living in urban areas were at risk of anxiety. Previous studies in Turkey, the United States, and China also stated that urban people were at risk of anxiety due to the COVID-19 pandemic.[18-20] In the other Indonesian study, residence between the island of Java and outside Java did not appear to have a significant relationship with anxiety, although the incidence of anxiety was higher in Java by 74.7% compared to those outside Java.[8] Therefore, living in urban areas is a risk factor for anxiety, and following research conducted by Islam *et al.*[21] stated that residents who live in urban areas are more likely to experience anxiety by 64.9% than those who live in rural areas.

Male respondents were more at risk of experiencing anxiety during the COVID-19 pandemic, which is in line with studies in Canada, the United States, South Korea, and the United Arab Emirates.[22-25] The intense anxiety experienced by males during the COVID-19 pandemic can be attributed to several factors. Males have a higher likelihood of receiving a COVID-19 diagnosis and being hospitalized due to the virus, with their fatality rate being twice that of females,[26] and information about it was probably widely spread across different media channels, potentially leading to heightened anxiety among males.[23] A study on millennial men found that when working from home during the pandemic lockdown, they experienced higher levels of distraction due to household responsibilities compared to women. They encountered more difficulties in staying organized and maintaining a consistent work routine, and also struggled to find adequate sources of self-motivation, which led to anxiety among them.[27] Males tend to delay seeking help or treatment compared to women, or they might find it more challenging to do so.[28]

On the other hand, respondents who were married and had children had poor coping mechanisms for anxiety because they were fearful and concerned about their health as well as their families. These results were also related to the health concerns variable. The more respondents understood the importance of maintaining their health and that of their families, the more they would seek information related to COVID-19. Meanwhile, the respondents who were not concerned about health would feel less worried. A previous study reported that parents experience high levels of anxiety and parental burnout during the COVID-19 pandemic.[29] A study in Poland also stated that having children is a risk factor for anxiety during the COVID-19 pandemic.[30] These findings may reflect individuals' heightened anxiety and concern for the health of their children and partners.

This study found that participants who were not sure about their COVID-19 infection status had a relationship with anxiety. This echoed with another study that found the anxiety level of patients suspected to have COVID-19 was scarce.[7] Furthermore, this study found that the respondents who were concerned about their own and family members' health status have a significant relationship with anxiety. During the lockdown and quarantine period, being alone, far away, separated from family members, and dealing with negative stigma were other problems that could make people's mental health even worse.[31,32] Another study also stated that emotional and psychological stress during the COVID-19 outbreak in health care workers in Italy was due to a prolonged pandemic and the uncertainty of when this pandemic would end.[33] The unsure COVID-19 infection status of household members and someone close to participants had a significant relationship with anxiety. This finding was in contrast with several previous studies.[7,18] Several things might influence anxiety, so more studies are needed to understand it, especially during the pandemic, lockdown, and quarantine period.

There are some differences when comparing the anxiety during the COVID-19 pandemic and post-pandemic. During the COVID-19 pandemic, respondents felt anxious due to the decrease in their household income because of the LSSR policy. At the same time, they were anxious about spreading the virus if they went to work. Meanwhile, during the COVID-19 post-pandemic, since this study was not conducted in that era, a study suggests that the cause of anxiety is loneliness due to changing social dynamics.[34] This study found that respondents who were not using the time well during the LSSR have a higher chance of developing anxiety.[34] Another study from China also found that the COVID-19 pandemic and the lockdown policy significantly affect cities' citizens in getting trouble falling asleep, which probably owes to the fear of COVID-19 disease and the anxiety for corresponding economic loss.[35] The other studies about self-efficacy and management might be related to time management during the LSSR period in the COVID-19 pandemic, where greater self-efficacy for self-management was associated and could be an important aspect to reduce the burden of long COVID-19 symptoms.[36] Also, anxiety has a significant impact on the sense of self-efficacy.[37] This study used a descriptive approach, which provides a broad overview; therefore, the results should be interpreted with caution. An analytical model was not employed to account for covariate or confounding variables that might have influenced the outcomes. This limits the ability to understand the role of other contributing factors fully.

Conclusion

Factors that are contributing to anxiety symptoms during the LSRR period in the COVID-19 pandemic in Indonesia are sex, residence, marital status, number of children, occupational status, infection by COVID-19, health concerns, and time usage management. Future research should consider these variables to explore the relationships more deeply and provide a more detailed understanding of the findings.

Abbreviations

COVID-19: coronavirus disease 2019; WHO: World Health Organization; SARS: Severe Acute Respiratory Syndrome; LSSR: Large-Scale Social Restriction.

Ethics Approval and Consent to Participate

This research had ethical clearance from the Research and Community Engagement Ethical Committee, Faculty of Public Health Universitas Indonesia, number 308/UN2.F10.D11/PPM.00.02/2020.

Competing Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Availability of Data and Materials

The raw data supporting the conclusions of this article will be made available by the authors, with reservation by email correspondence author.

Authors' Contribution

IH was responsible for the study concept and design. MST was contributed to data or analysis tools. IH, SA, SN, BPH, and MST were responsible for data collection. IH and MST performed the data analysis. IH, SA, SN, BPH, MST, and NRS wrote the manuscript. IH, SA, SN, BPH, MST, and NRS provided critical revision of the manuscript for intellectual content. All authors critically reviewed and approved the final version of the manuscript submitted for publication.

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