

Symptoms of Mental Health during Covid-19 Survivors: A Cross-Sectional Study in Indonesia

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Abstract

The Covid-19 pandemic can influence the mental condition of patients and affect their immunity levels. This article aims to investigate the mental health symptoms and disorders of Covid-19 survivors. This was observational and cross-sectional research. A total of 175 respondents participated, 84% of them being women and 16% being men. Their work history includes health workers at 75.4% and others at 24.6%. Respondents who have experienced anxiety are 32%, sadness was 25.7%, fear was 22.9%, and panic was 14.3%. The logistic regression showed that all of the tested characteristics have no significant effect on the respondents' mental states of anxiety, fear, and panic, with p-values of 0.388, 0.893, and 0.166; 0.245, 0.691, and 0.353; 0.612, 0.410, and 0.828. However, from the test results, it was observed that gender has a significant effect on sadness with a p-value of 0.027 and OR value of 5.308 (CI = 1.204-23.399). The percentage of women respondents that experienced sadness was 29.3% and men respondents were 7.1%. Other characteristics, which are age and work history, have no significant effect on sadness, with p-values of 0.650 and 0.844 respectively. There are no variables that affect anxiety, fear, and panic. Feelings of sadness in patients are influenced by gender.

Keywords: anxiety; Covid-19; mental disorder; mental health

INTRODUCTION

The coronavirus disease (Covid-19) was first identified at the end of December 2019 in Wuhan, China. Covid-19 presents pneumonia-like symptoms and signs caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). As of November 26th, 2021, there have been at least 258,830,438 cases and 5,174,646 deaths globally due to Covid-19 ⁽¹⁾ ⁽²⁾. Indonesia reported 4,254,815 confirmed cases of Covid-19 with 143,782 deaths ⁽³⁾.

In Indonesia, there were three spikes in Covid cases during 2020 and 2021. In 2020, the spike occurred in September, with death cases reaching 8,544 and the second spike occurred between December to January 2021. At the time, the number of deaths reached 131,923 and almost all hospitals

were full of Covid-19 patients. In 2020, Covid-19 patients did not reach family clusters, but in 2021, Covid-19 patients already reached family clusters and resulted in more deaths.

The increase in mental disorders during this pandemic is dangerous since it could also worsen physical health. Experts have agreed that physical and mental health are interrelated and must be managed in a balanced way. Several psychiatrists and psychologists noted that almost all types of mild to severe mental disorders can occur during pandemics ⁽⁴⁾. According to Brooks *et al.*, 2020, psychological impacts during the pandemic include post-traumatic stress disorder, confusion, anxiety, frustration, fear of infection, insomnia, and a sense of helplessness ⁽⁵⁾.

Several mental disorders that have been identified to arise due to pandemics include anxiety, restlessness, fear, and sadness⁽⁶⁾⁽⁷⁾. Anxiety is a state of apprehension or worry that something bad will happen soon⁽⁸⁾. Anxiety reactions are also different for each individual. For some people, anxiety reactions are not always followed by physiological reactions. However, in particular individuals, the complexity of their response to anxiety can involve momentary physiological reactions such as faster heart rate, sweating, stomachache, headache, itching, and other symptoms. After a person begins to feel anxious, the self-defense system will then re-assess the threat, then it will assess the efforts to overcome, reduce, or eliminate the feeling of being threatened. To overcome this anxiety, a person can use self-defense (defense mechanism) by increasing cognitive or motor activity⁽⁴⁾.

Panic includes recurring and unexpected panic attacks. Panic attacks involve intense anxiety reactions followed by physical symptoms, such as heart palpitations, rapid breathing, shortness of breath or difficulty in breathing, profuse sweating, as well as feeling weak and dizzy⁽⁸⁾. Panic reactions will be different for each individual.⁽⁹⁾

Fear is a feeling of anxiety and agitation in response to threats. Whereas a phobic disorder is a persistent fear of objects or situations which are disproportionate to the threat itself. Fear arises when there are clear or real threats that are coming from the environment and are not causing conflict for the individuals⁽⁸⁾. In normal fear reactions, neurons throughout the brain trigger and create anxiety. The process also stimulates the GABA (gamma-aminobutyric acid) system, which inhibits this activity and reduces anxiety. Benzodiazepines can reduce anxiety by increasing the release of GABA simultaneously. Conversely, drugs that block the GABA system trigger anxiety⁽¹⁰⁾.

Sadness is a psychological disorder associated with or characterized by, feel-

ings of deprivation, loss, hopelessness, inability to do anything, grief, and anger. These feelings are usually considered negative. When a person is sad, they become less talkative, less energetic, and emotional⁽¹¹⁾. Feelings of sadness are usually temporary and would disappear over time when the difficult event has passed or just by doing something enjoyable. When a person is sad, they tend to express it by crying or being alone for a moment until their sadness disappears.

Several factors affect these mental conditions. These factors may be internal (from the individual) or external. Individual factors could be the individual's characteristics such as gender, work history, and age. Characteristics are particular features that help distinguish one individual from another, both in terms of attitude and behavior⁽¹²⁾⁽¹³⁾⁽¹⁴⁾.

Age is one of the most important demographic characteristics associated with mental disorders. Each age has different emotional stages. With the elderly, their vulnerability is caused by a degenerative process that decreases their body's immunity, causing them to be susceptible to diseases, including coronavirus. During uncertain conditions due to the pandemic, it is easy for older people to feel excessive anxiety that affects their physical health condition. Such complex and psychologically stressful situations in every age group require immediate attention and treatment to prevent more serious mental disorders. The vulnerable group mentioned above are the general portraits of the current condition of society⁽⁴⁾.

Differentiation in mental disorders is one of the most interesting and stable findings in psychiatry. Women score worse on each scale tested than men. This suggests that the mental health quality of life is lower (67 vs 73) in women compared to men. This is also in line with previous studies, which found that well-being is lower for women than for men (14.5 vs 15.6)⁽¹⁵⁾⁽¹⁶⁾.

Healthcare workers are directly involved in the diagnosis, treatment, and care of patients affected by Covid-19. On average, healthcare workers spend 16 hours each day caring for Covid-19 patients, which is considered an overwhelming workload. In addition, with the ever-increasing number of confirmed and suspected cases, the depletion of personal protective equipment, the lack of specific drugs available for Covid-19 treatment, and the feeling of receiving inadequate support by health care administration have been assumed to contribute to the mental burdens of health care workers ⁽²⁾.

So far, research related to the relationship between individual characteristics and mental disorders during Covid-19 in Indonesia has not been provided adequately. Based on an original article by Renström, & Bäck (2021), there are findings that state various Covid-19 critical aspects may evoke different emotional reactions ⁽⁷⁾. Another article stated that health professionals, regardless of their age, have shown significant levels of mental disorders, due to handling Covid-19 patients ⁽¹⁷⁾⁽¹⁸⁾⁽¹⁹⁾. According to Deolmi & Pisani (2020), there is an urgent need to create new strategies for early psychological interventions to reduce the impact of the Covid-19 pandemic on mental health ⁽⁶⁾.

This paper will briefly review public mental health, especially regarding the management of mental health during the Covid-19 pandemic. A literature study approach was conducted to investigate the mental disorder symptoms that arise and how to manage them.

This article aims to determine the prevalence of mental health symptoms disorders in Covid-19 survivors, which includes anxiety, sadness, fear, and panic, as well as determine whether these factors are influenced by patient characteristics such as gender, age, and work history.

METHOD

This was observational and cross-sectional research. Questionnaires were

distributed during a community service webinar. The inclusion criteria were adult Indonesian citizens who have recovered from Covid-19. Webinar participants that met these criteria would then fill out the questionnaire through *the form*. The total response obtained was 831, but the number of completed responses was 175. The independent variables are gender, age, and work history. The dependent variable is the respondents' mental condition, namely panic, anxiety, fear, and sadness. The questionnaire has been tested for validity with the product moment and its reliability using Cronbach's Alpha. The data was then analyzed using logistic regression. The variables tested included gender, age, work history (health workers or non-health workers), and mental conditions including panic, anxiety, fear, and sadness. This research has been approved by the Ethics Committee of the Faculty of Public Health, Airlangga University and the ethics number was 50/EA/KEPK/2021.

RESULT AND DISCUSSION

A total of 175 respondents participated, including 28 men (16%) and 147 women (84%) (**Table 1**). The questionnaires were distributed to respondents, and validity and reliability tests have been conducted. Based on the validity test results, the questionnaire is proven valid (5.308). The lowest value is 1.204 and the highest value is 23.399 (**Table 4**). The result of the validity test is 0.406-0.758 and the reliability statistics used Cronbach's Alpha (0.895).

This study found that for the work history variable, as much as 75.4% of our respondents were health professionals, and the remaining 24.6% worked in other sectors. The average age of our respondents is 32 years. It was also found that the percentage of respondents who experience anxiety is 32%, sadness is 25.7%, fear is 22.9%, and panic is 14.3%. Furthermore, the logistic regression results demonstrated that gender ($p = 0.388$), age ($p = 0.893$), and work history (0.166) have no significant effect on mental anxiety. It was found that the characteristics tested also have no sig-

nificant effect on the mental condition of fear with the p-values for gender being 0.245, age being 0.691, and work history being 0.353. The respondents' characteris-

tics also do not significantly affect the mental condition of panic with the p-values for gender being 0.612, age being 0.410, and work history being 0.828.

Table 1. Demographic characteristics of the study population (n=175)

Characteristics	n
Gender	
Men	28 (16%)
Women	147 (84%)
Work History	
Health Workers	132 (75.4%)
Others	43 (24.6%)
Age, mean	18-60 years (32.08 ± 8.757)

Table 2. Bivariate test 1

	Anxiety		P	Sad		P	Fear		P	Panic		P
	No	Yes		No	Yes		No	Yes		No	Yes	
Age (M±SD)	32.0±8.7	32.3±8.9	0.861	32.3±9.0	31.4±7.9	0.547	32.0±8.4	32.3±9.9	0.889	32.3±9.0	30.6±7.3	0.350

Table 3. Bivariate test 2

	Anxiety		P	Sad		P	Fear		P	Panic		P				
	No	Yes		No	Yes		No	Yes		No	Yes					
	n	%		n	%		n	%		n	%		n	%		
Gender																
Men (n=28)	17	60.7%	11	39.3%	26	92.9%	2	7.1%	24	85.7%	4	14.3%	25	89.3%	3	10.7%
Women (n=147)	10	69.4%	45	30.6%	10	70.7%	4	29.3%	111	75.5%	36	24.5%	125	85.0%	22	15.0%
	P=0.367			P=0.027			P=0.239			P=0.77						
Work History	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Health Workers (n=132)	86	65.2%	46	34.8%	98	74.2%	3	25.8%	104	78.8%	28	21.2%	114	86.4%	18	13.6%
Others (n=43)	33	76.7%	10	23.3%	32	74.4%	1	25.6%	31	72.1%	12	27.9%	36	83.7%	7	16.3%
	P=0.157			P=0.982			P=0.364			P=0.667						

Table 4. The association between clinical characteristics and mental health symptoms disorders in Covid-19 survivors (n=175)

	B	Sig.	Exp(B)	95% C.I. for EXP(B)	
				Lower	Upper
Anxiety					
Gender	-0.371	0.388	0.690	0.297	1.602
Age	-0.003	0.893	0.997	0.960	1.036
Work	-0.569	0.166	0.566	0.253	1.267
Constant	0.708	0.556	2.029		
Sadness					
Gender	1.669	0.027	5.308	1.204	23.399
Age	-0.009	0.650	0.991	0.951	1.032
Work	-0.082	0.844	0.921	0.405	2.094
Constant	-3.820	0.030	0.022		
Fear					
Gender	0.670	0.245	1.954	0.632	6.040
Age	0.008	0.691	1.008	0.969	1.049
Work	0.382	0.353	1.464	0.655	3.273
Constant	-3.209	0.029	0.040		
Panic					
Gender	0.334	0.612	1.396	0.385	5.058
Age	-0.022	0.410	0.978	0.927	1.031
Work History	0.109	0.828	1.115	0.418	2.976
Constant	-1.845	0.291	0.158		

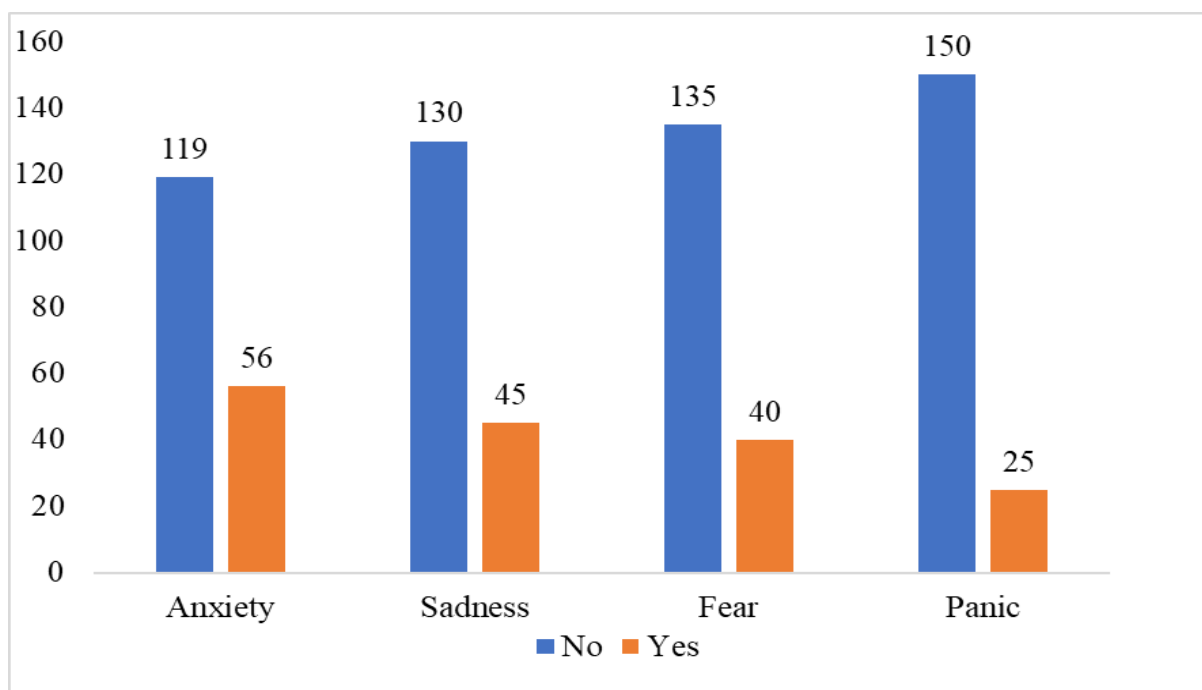


Figure 1. Frequency distribution of mental health symptoms disorders in Covid-19 survivors (n=175)

However, from the test results, it was found that gender has a significant effect on the mental condition of sadness with a p-value of 0.027, OR value of 5.308 (CI = 1.204-23.399), and the percentage of women respondents experiencing sadness at 29.3%, while only 7.1% of men respondents experience sadness. Other characteristics, such as age and work history have no significant effect on the mental condition of sadness with a p-value for age being 0.650 and work history being 0.844.

The results have proven that gender, age, and work history all have a negative and insignificant effect on anxiety, as seen from the X variable significance value above 0.05. The negative direction of these assessments indicates the statistically insignificant relationship between the independent variables mentioned above with the anxiety variable.

This study's results prove that gender has a positive and significant effect on sadness as seen from the X variable significance value being below 0.05. The positive direction of this assessment indicates a significant and positive direction. Conversely, the results also show that age and work history has a negative and insignificant effect on sadness. This can be seen from the X variables with significance values above 0.05. The negative direction of these assessments indicates an insignificant relationship between the variables age and work history with sadness.

Furthermore, our results have proven that gender, age, and work history have a positive but insignificant effect on fear. This can be seen from the X variable significance value being above 0.05. The positive direction of this assessment indicates an insignificant positive direction.

Moreover, we found that gender and work history has a positive but insignificant effect on panic. This can be seen from the X variable significance values being above 0.05. The positive direction of this assessment indicates an insignificant positive direction. Meanwhile, the also results show that age has a negative and insignificant effect on panic. This can be seen from the

X variable significance value being above 0.05. The negative direction of this assessment indicates an insignificant negative direction.

DISCUSSION

Based on the above-mentioned results, we found that women respondents are in general more sad than that of men respondents. These results are following a quote from one of the quick study results of The Family Resilience Survey given during the pandemic conducted by Bogor Agricultural University (*Institut Pertanian Bogor*). They found that from 66% of their women respondents, the most common psychological disorder experienced by them is a proclivity towards sadness (46.9%)⁽⁴⁾.

Based on this study's results, anxiety is not significant for age, gender, and work history. This is not in line with the quick study results of The Family Resilience Survey given during the pandemic conducted by Bogor Agricultural University. They found that from 66% of their women respondents, the most common psychological disorder they have experienced is anxiety (50.6%)⁽⁴⁾. Anxiety is something that cannot be avoided during stressful conditions such as the Covid-19 pandemic situation. One of the important ways to manage anxiety is by filtering the information received within a certain time. The information should come from trusted sources and have credibility in their respective fields. If an individual starts to feel mild symptoms of a mental disorder, the first step is to ask for help from trusted and closest circumstances, it can be partners, parents, brothers, or friends. If that does not work, then the next step is to ask for help from competent parties such as a psychiatrist. Some mental health practitioners such as the Indonesian Psychological Association (*Himpunan Psikologi Indonesia*) and other mental health clinics offer online support or home visits through counseling and psychotherapy⁽⁴⁾.

Moreover, the results found also indicate that sadness is significant for gender and not significant for age and work history. Pieh et al. 2020, argued that gender demonstrates an impact on mental health in their research. Differentiation in mental disorders is one of the most interesting and stable findings in psychiatry. Women score worse on each scale tested than men. For example, 25% of the women tested scored above the PHQ-9 limit greater or equal to 10 points for depressive symptoms, whereas only 17% of men obtained the same score. This suggests that the mental health quality of life is lower (67 vs 73) in women compared to men. This is in line with previous studies, where it was found that well-being is lower for women than it is for men (14.5 vs 15.6) ⁽¹⁵⁾⁽¹⁶⁾.

Furthermore, this study found that the variables age, gender, and work history have no significant impacts on fear or panic. Fear and panic may occur at any age regardless of work history. The attitude depends on the mental condition of the patient. There is no influence of age on symptoms of mental disorders either for anxiety, sadness, panic, and fear. Nevertheless, symptoms of mental disorders may appear in any age group since different age groups will experience problems according to their growth level. Young individuals, tend to handle problems related to society or the efforts related to becoming adults. When people are more mature, symptoms of mental disorders will arise due to conflict associated with disputes, such as opinions with partners. Specifically, symptoms of mental disorders due to Covid-19 are not influenced by age, since people at any stage of life can experience symptoms of mental disorders which are not solely caused or triggered by Covid-19. Covid-19 is a condition that will affect mental health, but it is not influenced by age. Regardless of age, people can avoid experiencing anxiety, sadness, panic, and fear through their efforts to prevent it.

Moreover, it was found that there is no influence of work history on symptoms of mental disorders, such as anxiety,

sadness, panic, and fear. There is the assumption that health professionals have a greater chance of experiencing symptoms of mental disorders after caring for Covid-19 patients. However, since they adhere to health protocols, they will not be easily infected by the patients. Therefore, even though some respondents have worked as health workers, they can suppress their symptoms of mental disorders since they understand the health protocols. Meanwhile, individuals who are not in the health sector may have limited information, and due to this lack of information, they may feel calm and avoid symptoms of mental disorders.

Additionally, health professionals also learn about the contributing factors that may cause them to get Covid-19. With this information, they can anticipate situations where they may be at risk and apply mitigation procedures to prevent them from getting infected with Covid-19. This sufficient knowledge does not cause them to feel anxiety, sadness, panic, and fear. In other words, they already understand and filter the information given, therefore they do not suffer from any symptoms of mental disorders. People with non-health work experiences also do not feel panic or may feel safe since they do not have direct contact with Covid-19 patients in the hospital.

Furthermore, many factors affect how quickly people adapt and how they do it, such as personality, age, experience, learning process, physical condition, and environment ⁽²⁰⁾. Due to the differences in each individual's adaptive ability, the adaptation process will lead to successful adaptation or failure to adapt. Success in adapting will create resilience in individuals. Meanwhile, failure to adapt will deteriorate mental health conditions ⁽⁴⁾.

The weakness of this study is that the questionnaire results might be biased on the occurrence of symptoms of mental disorders resulting from environmental factors since it does not take the type of treatment and severity of the disease into

account. Further research should investigate these two factors to identify their relationship with symptoms of mental disorders.

CONCLUSION

The highest prevalence of symptoms of mental disorders in Covid-19 patients is anxiety. Characteristics such as the age and work history of Covid-19 patients do not have significant impacts on symptoms of mental disorders, except for gender, as it was found that women tend to feel sad more than men.

The majority of patients do not experience panic. The majority of patients do not experience fear. The majority of patients do not experience grief. The majority of patients do not experience anxiety. The clinical characteristics of the patient did not affect fear, anxiety, and panic. However, gender affects grief in patients. There needs to be psychological assistance in the form of moral support for female patients.

CONFLICT OF INTEREST:

The authors have no conflicts of interest associated with the material presented in this paper.

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