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Analysis of Factors in Emotional Disorders of Patients with Confirmed Positive Covid-19 while Undergoing Isolation in a Quarantine Home

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Abstract

The Covid-19 pandemic is the world's recent focus. Covid-19 still spreads rapidly and widely, including in Indonesia. The virus impacts human social life, psychology, and behavior. These impacts also attack people who are isolated/quarantined because of Covid-19 to avoid potential spread. This study employed a correlational descriptive and was conducted at the quarantine house in Mojokerto Regency.

The research sample was 543 respondents selected by a purposive sampling technique. The research instrument was Self-Reporting Questionnaire-29, a questionnaire issued by the Directorate of Mental Health Services of the Indonesian Ministry of Health. The research instrument's domains were anxiety and depression, psychomatics, symptoms of psychotic disorders, and trauma stress. The research's parametric statistical tests were the Pearson test and linear regression ($\alpha=0.05$).

The research reveals three significant factors in emotional disorders of patients with confirmed positive Covid-19 while undergoing isolation in a quarantine house. They were education, social support, and socioeconomic status.

The findings of this research recommend that nurses and psychologists take initiatives to provide psychological assistance and target individual interventions for confirmed patients experiencing depression and anxiety.

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Introduction

Globally, there have been 98,794,942 confirmed cases of Covid-19 and 2,124,193 deaths¹. The number of patients with confirmed positive recorded from the first case to today has reached 1,024,298 patients. The number of recovered patients has reached 831,330 people (81.2%). The number of active cases or patients who still need treatment, as of today is 162,617 cases (15.9%). Mortality increases by 28,855 cases (2.8%)². The Covid-19 data in Mojokerto Regency show 13,094 new cases³. Global health governance increasingly focuses on epidemic

and pandemic health emergencies requiring interdisciplinary approaches to access scientific knowledge and guide crisis preparedness and responses⁴. The one-health approach seeks to strategize coordinated efforts across multiple overlapping disciplines, including environmental monitoring and environmental health⁵. This condition urges for social isolation and lockdowns.

Furthermore, the situation has changed people's daily lives in Indonesia drastically. The population experiences new, unexpected, and rapidly changing situations, such as obligation to stay at home, greatly dynamic changes, travel restriction, prohibition on recreational activities, and social life restriction. Moreover, the work situation has changed drastically: many people have lost temporary or permanent jobs, many people are forced to work from home without good preparation, and workers of vital sectors have heavier workloads, stress levels increase, and virus exposure increases⁶. The Indonesian health system is overwhelmed, and hospitals

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experience shortages of ward occupancy (particularly emergency room and Intensive Care Unit decreases), medical equipment (mostly ventilators), and personal protective equipment. Humans are likely to encounter such situations with a high level of fear and concerns about the pandemic and its consequences⁷.

Studies investigating the psychological impact of previous infectious outbreaks, such as the Severe Acute Respiratory Syndrome (SARS) similar to the Covid-19 pandemic, found healthcare workers' and the general public's heavy psychological burdens, such as anxiety, depression, panic attacks, and psychotic symptoms⁸. Healthcare workers who were quarantined, worked in SARS units, or had family or friends infected with SARS, had more anxiety, depression, frustration, fear, and post-traumatic stress than those did not experience⁹. The psychological wellbeing is influenced by two factors: internal factors (age, gender, and education) and external or social factors (economic burdens, family support, and social support)¹⁰. Several studies investigated the influences of social factors on mental health. Social support is a common variable, but only few studies have investigated the relationship between socioeconomic status and health¹¹. Findings from previous studies suggest that isolated individuals have high levels of anxiety and stress¹².

A person's mental attitude when firstly infected with Covid-19 involves fear, anxiety, and panic about the Covid-19. The feeling of fear occurs because the virus has killed many people. In addition, scientists have not found medicines for Covid-19, and the community has bad stigma towards people suffering from Covid-19¹³. Fear is a fundamental-adaptive defense mechanism to survive, and it involves several processes of biological preparation for responding to a potentially threatening event. However, when it is chronic or disproportionate, it becomes dangerous and can be a key component in the development of various psychiatric disorders¹⁴. Fear increases anxiety and stress levels of healthy people and intensifies symptoms of people with psychiatric disorders. During epidemics, people suffering from mental health are more than people suffering from infection¹⁵. This research aims to analyze factors in emotional disorders of patients with confirmed positive Covid-19 while undergoing isolation in a

quarantine home.

Materials and methods

This study employed a correlational descriptive method. This research was conducted in Mojokerto Regency. The research employed a purposive sampling technique and involved 543 respondents who met the research criteria and objectives¹⁶. The research samples had inclusion criteria: 1) patients diagnosed with Covid-19 by the PCR test, 2) adults (18-59 years), and 3) *asymptomatic* Covid-19 patients. Meanwhile, the exclusion criteria were (1) patients with comorbidities and (2) patients with severe Covid-19 symptoms. The instrument of this research was the Self-Reporting Questionnaire-29, a questionnaire issued by the Directorate of Mental Health Services of the Indonesian Ministry of Health. The instrument has several domains: anxiety and depression, psychomatics, symptoms of psychotic disorders, trauma, and stress. The data were collected through the following steps: 1) selecting research subjects adjusted to the inclusion criteria, 2) providing clear research information for the research subjects, 3) requesting the respondent's approval as a research subject by providing an informed consent sheet, and 4) distributing questionnaire to all respondents. Meanwhile, the parametric statistical tests of this research were the Pearson test and linear regression. The study had conducted an ethical test. It passed the ethical test and obtained a research permit from the College of Health Science Maluku Husada, Indonesia with no. RK.08/KEPK/STIK/II/2020.

Results

The respondents' characteristics include gender, education, number of family members, social support, ages, and socioeconomic status. Table 1 shows that the majority of the respondents' characteristics are male, junior high school graduates, patient with five family members, and patient receiving social support from family and friends. The mean age is 30.31 years, and the mean socioeconomic status is 35.76, categorized as middle-low (Table 1).

Characteristics of respondents	(n=543)		α
	f	%	
Gender			.063
Man	410	75.5	
Woman	133	24.5	
Education			.008*
Primary School	18	3.3	
Junior High School	36	6.6	
Senior High School	215	39.6	
Undergraduate	153	28.2	
Postgraduate	49	9.0	
Professional qualified doctors, nurses	72	13.3	
Number of family members			.205
One	7	1.3	
Two	57	10.5	
Three	111	20.4	
Four	107	19.7	
Five	133	24.5	
Six	128	23.6	
Social support			.05*
Yes	317	58.4	
No	226	41.6	
Age			.130
Mean + SD	30.31 ± 10.920		
Socioeconomic status			.001*
Mean + SD	35.76 ± 7.705		

Table 1. The Characteristics of Respondents (n=543).

Table 2 shows that if questions 1-20 have more than five yes answers, the respondents have psychological problems, such as anxiety and depression. Meanwhile, question 21 shows that there was no respondent using psychoactive substances/drugs. If respondents do not answer one or more yes for the questions 22-24, they experience symptoms of a psychotic disorder. If questions 25-29 do not have one or more yes answers, the respondent experiences symptoms of post-traumatic stress disorder/stress disorder after trauma.

Table 3 reveals the final analysis results of multivariate multiple linear regression. The formula of predicting the value of emotional disorders is:

$$\text{Emotional disorders} = 9.044 + 0.084 \text{ social support} - 0.102 \text{ socioeconomic status}$$

The multivariate analysis result concludes that the most influential variables in emotional disorders are social support with a value of β 0.084 and socioeconomic status with a value of β -0.102.

Discussion

During the worldwide outbreak of Coronavirus disease 2019 (Covid-19), a confirmed patient's mental health condition is very important to ensure his health¹⁷. Mental health is essential for all humans and a productive and efficient life¹⁵. Since the effects of

mental health are adverse, it is crucial to investigate potential factors and mechanisms to improve mental health and maintain productivity of health workers in the midst of an epidemic. Among all contributing factors, social support is recognized as a protective factor for mental health¹⁸. The results show that the significant factors in emotional disorders of patients with confirmed positive Covid-19 while undergoing isolation in a quarantine house are education, social support, and socioeconomic status with the α=.05. The results of the multivariate linear regression test reveal that the most influential factors in emotional disorders of patients with confirmed positive Covid-19 are social support and socioeconomic status with a α=.04.

Symptoms	Yes	No
1. Do you have frequent headaches?	269	274
2. Do you lose your appetite?	221	322
3. Do you sleep poorly?	323	220
4. Do you get scared easily?	450	93
5. Do you feel anxious, tense, or worried?	482	61
6. Are your hands shaking?	402	141
7. Do you have indigestion?	431	112
8. Do you find it difficult to think clearly?	342	201
9. Do you feel unhappy?	305	238
10. Do you cry more often?	229	314
11. Do you find it difficult to enjoy daily activities?	234	309
12. Do you have difficulty making decisions?	171	372
13. Do you neglect your daily activities/tasks?	142	401
14. Do you feel as if you cannot play a role in this life?	80	463
15. Do you lose interests in many things?	112	431
16. Do you feel worthless?	54	489
17. Do you have thoughts of ending your life?	24	519
18. Do you feel tired all the time?	128	415
19. Do you feel bad in your stomach?	74	469
20. Do you get tired easily?	177	366
21. Do you drink more alcohol than usual or do you use drugs?	0	543
22. Are you sure that someone else is trying to harm you in some way?	14	529
23. Is there anything annoying or unusual on your mind?	105	438
24. Have you ever heard a sound you do not know its source or a sound that other people could not hear?	74	469
25. Do you have a disturbing dream about a disaster/calamity or is there certain time when you seem to experience the disaster again?	68	475
26. Do you avoid activities, places, people, or thoughts that remind you about the disaster?	101	442
27. Do your interests in friends and your usual activities decrease?	239	304
28. Do you feel very annoyed if you are in a situation that reminds you about a disaster or if you think about it?	157	386
29. Do you have troubles understanding or expressing your feelings?	130	413

Table 2. Emotional Disorder Symptoms of Patients with Confirmed Positive Covid-19 while Undergoing Isolation in a Quarantine Home (n = 543).

Variable	Beta	R ²	Constant	α
Age	-0.057			.194
Gender	0.088			.211
Education	-0.050			.318
Number of family members	-0.019	0.035	9.044	.777
Social support	0.084			.04*
Socioeconomic status	-0.102			.04*

Table 3. Multivariate Linear Regression of Influential Variables in Emotional Disorders.

The demographic data of this study are different from those of previous findings. Several variables are significantly associated with mental disorders, namely age, sex, occupation, housing dimensions, and disease status¹⁹. The results of previous studies conducted when the Covid-19 outbreak firstly occurred show that the prevalence of depression and anxiety symptoms in Chinese adolescents who participated in the studies was relatively high; social support was a protective factor for adolescent mental health²⁰. Another finding shows that most of Covid-19 patients in the ICU suffered from psychosocial problems. One of the factors influencing physical and psychological wellbeing is social support²¹. Social support can come from various sources, such as family, friends, partners, community ties, and colleagues^{22,23}. Social networks influence health behavior through several mechanisms. Meanwhile, social contacts provide information about applicable resources and products to change behavior. Furthermore, social networks provide social capital or information to take action¹⁸. The literature is now available to explain the roles of perceived social support that influence positive-psychological outcomes, such as self-efficacy, self-esteem, and resilience. However, this can contribute to improve health behavior²³.

Emotional disturbance is a human mental health disorder. Besides social support factors, the socioeconomic status affects the emotional disorders of Covid-19 patients²⁴. Previous research investigating healthcare workers posits that an epidemic affects three aspects: economic problems, interpersonal communication problems, and mental health²⁵. Another study found that two-thirds of the respondents had decreasing income (61.6%)²⁶. The latest finding shows that socioeconomic status significantly affects the prevalence of depressive symptoms²⁴. Studies show that the impact of a pandemic on the psychological distress of the population can influence the progress of the pandemic; thus, the psychological distress indirectly affects mortality¹⁷. Furthermore, the development of mental disorders in the community can create burdens that hinder national social and economic recovery when the pandemic ends. This research's data of the psychological distress levels are not dramatically higher than the reported data in previous studies; this finding indicates that, in the early stages of the

pandemic, the population had resisted the unprecedented changes they compulsorily encountered⁹.

However, researchers identified certain groups who were probably more vulnerable to the social and economic challenges of the pandemic, particularly people with affected income, children living at home, and vulnerable health conditions to Covid-19 effects²⁷. This study has strengths and limitations. The advantage of this research shows that the sample highly represented the Indonesian population. They were recruited in the early outbreak by employing standard measurement to possibly compare this research's findings with the following studies' findings. Furthermore, this study has several limitations. First, although the sampling frame and sample size were large, they were not a true random probability sample because it is quite difficult to obtain perfect data in this situation. Second, psychological factors possibly influenced individual's decisions to participate in the research, and, thus, the sample was possibly biased. Third, all mental health assessments were based on self-reports not interviews by doctors. This could result in overestimating prevalence rates. Our findings provide evidence that supports the adoption of strategies to increase social support during the Covid-19 epidemic. For example, nurses and psychologists should take initiatives to provide psychological assistance and targeted individual interventions for patients with confirmed depression and anxiety. Moreover, the efforts should encourage the availability of other types of social support to improve Covid-19 patients' mental health.

Conclusions

The significant factors in the emotional disturbance of patients with confirmed positive Covid-19 while undergoing isolation in a quarantine home are education, social support, and socioeconomic status. Meanwhile, the most influential factors are social support and socioeconomic status. Further research should be conducted to prove that this group will exhibit higher levels of psychological distress at a future stage of the pandemic, and that special interventions and policies must be developed to meet the Covid-19 patients' needs.

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Declaration of Interest

The authors report no conflict of interest.

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