

Original Article



The Association of Physical Symptoms and Psychological Problems in the Indonesian Community During the COVID-19 Outbreak

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Abstract

Introduction: Changes in health status and adjustments to new lifestyles during the pandemic have triggered societal psychological problems in society. This study aimed to explore the correlation between physical symptoms and psychological problems in Indonesian society during the COVID-19 outbreak.

Methods: This cross-sectional study employed an online survey to gather data from 9425 participants in Indonesia between June and July 2020, which was selected using convenience sampling. The Self-Reporting Questionnaire (SRQ) instrument was employed to investigate psychological problems, the utilization of psychoactive substances, psychotic symptoms, and post-traumatic stress disorder (PTSD). Physical symptoms were assessed through self-reports indicating the presence or absence of experienced COVID-19 symptoms. The statistical analyses were conducted using Spearman-rank and Cramer's V correlation.

Results: The findings suggest that the perceived physical symptoms during the COVID-19 outbreak are significantly associated with psychological problems, (including decreased energy, somatic symptoms, depressive moods, and depressive thoughts, the use of psychoactive substances, psychotic symptoms, and PTSD).

Conclusion: Our study concluded that physical health is significantly associated with psychological problems. It is essential to eliminate factors that cause psychological problems by promoting the physical condition of the general population. Through promotive and preventive efforts, physical and psychological conditions should be improved in COVID-19 outbreaks.

Introduction

In December 2019, a series of pneumonia cases were reported in Wuhan, China, and soon after, the World Health Organization (WHO) reported the causative agent to be a coronavirus.¹ Coronavirus disease 2019

(COVID-19) is a highly contagious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-COV-2).² Healthcare systems worldwide are severely affected and struggling to meet the urgent healthcare needs caused by the COVID-19 pandemic.^{3,4} By July 2,

2020, the pandemic had caused more than 500 000 deaths worldwide and was considered a significant threat to global health.⁵ Thus far, COVID-19 has spread to 216 countries, including Indonesia. Almost 60 000 Indonesian people were confirmed positive in July 2020, which increased by almost 1400% to 836 000 people confirmed positive in January 2021. Around 24 000 people have died, and it is estimated that this number will continue to increase.⁶

COVID-19 has an incubation period of 2–14 days, and the symptoms are usually nonspecific (e.g., fever, dry cough, and fatigue). It impacts several body systems, including the respiratory system (e.g., coughing, shortness of breath, sore throat, rhinorrhea, hemoptysis, and chest pain), gastrointestinal system (e.g., diarrhea, nausea, and vomiting), musculoskeletal system (e.g., muscle aches), and neurological system (e.g., headache or confusion).^{7,8} A recent study found that as many as 98% of patients had fever symptoms, most of whom had temperatures over 38 °C.² The same study also found that patients experienced cough (76%), dyspnea (55%), fatigue, and muscle aches (44%).² Similarly, another study reported that fever (87.9%) and cough (67.7%) were the most common symptoms, while diarrhea (3.7%) and nausea (5.0%) were rarely encountered.⁹ COVID-19 has a case fatality rate of 2%–3%.⁸ However, the COVID-19 mortality rate in Indonesia reached 5%.⁶

COVID-19 is a considerable challenge due to physical and psychosocial problems, especially for COVID-19 patients.¹⁰ The threats to physical health and deaths resulting from the COVID-19 outbreak have triggered various psychological problems.¹¹ Previous research conducted in Portugal showed that the COVID-19 outbreak had a moderate-severe psychological impact on 49.2% of respondents.¹² Some psychological reactions that are commonly found during this COVID-19 outbreak are anxiety (28.8%), depression (16.5%), and stress (8%) at moderate to severe levels.^{13,14} People have been experiencing many psychological problems while adjusting to their current lifestyle and fearing the impact of COVID-19 on their health.¹⁵ People with feeble self-rated health are significantly associated with more significant psychological impact than people with excellent or good self-rated health status.¹³ It is remarkable that feeling infected with COVID-19, the types of symptoms that are felt were related to anxiety and depression.¹⁶ Interestingly, previous research supports the notion that physical symptoms are associated with a higher psychological impact even though the result is not statistically significant.¹⁵

In Indonesia today, all parties (i.e., the government, health workers, religious leaders, and influencers) are working together to promote the official health protocol, including wearing masks, washing hands with soap, and maintaining distance. However, these efforts will not be successful if the community does not act wisely; they must be applied in everyday life to reduce the prevalence

of COVID-19. The presence or absence of individuals' physical symptoms is allegedly related to the psychological impact that the COVID-19 outbreak has on the community. To the best of our scholarly knowledge, there is a lack of information about the relationship between the physical symptoms of COVID-19 and the emergence of psychological problems in the community during the COVID-19 outbreak, especially in the Indonesian context. This study aimed to explore the correlation between physical symptoms and psychological problems in Indonesian society during the COVID-19 outbreak. Health professionals can use the findings of this study to maintain the community's mental health and survival during the COVID-19 outbreak.

Materials and Methods

This cross-sectional study was conducted in June and July 2020. Data were gathered through an online survey using Google Forms. In addition, survey questionnaires were disseminated via a WhatsApp platform. Participants in this study were the general population who did not test for COVID-19 and the general public who had or did not have symptoms of COVID-19. In determining the number of samples needed in this study, the researchers calculated using the Lemeshow formula with an unknown population (95% confidence level and a maximum estimated proportion of 0.5) so that the minimum number of samples required was 385 participants. Out of 9711 respondents who filled out the questionnaire, 9425 participants completed it (response rate of 96.78%). The researcher applies convenience sampling in determining respondents by inclusion and exclusion criteria. The inclusion criteria in this study were (1) respondents were general population/ community aged over 17 years old, (2) willing to participate and can provide consent for the study, and (3) completing the questionnaire. The exclusion was respondents who work as health care workers or health volunteers and respondents aged < 17 years old.

A set of questionnaires was employed to obtain a global picture of the participants' responses. The instrument consisted of three sections covering participants' demographic data, self-reports related to COVID-19 symptoms, and general psychological symptoms (e.g., psychological distress). Section one inquired about the participants' demographic profiles, including age and gender. Section two required participants to self-report the presence or absence of COVID-19 symptoms. This section also asked participants, "Do you feel the following symptoms?" and presented them with a choice of answers in the form of a checklist: fever, cough, colds, sore throat, and severe difficulty breathing (e.g., breathing very fast or talking in one word), mild-severe pneumonia, and not feeling all the symptoms. Participants who chose one of the symptoms were classified as "feeling symptoms," while those who indicated that they did not feel any of the

symptoms were classified as “feeling no symptoms.” The third section, the Self-Reporting Questionnaire (SRQ), was used to assess the psychological problems experienced by participants. The WHO developed this questionnaire, which has been applied to assess mental health problems in the Indonesian context.¹⁷⁻¹⁹

This questionnaire has passed the tests of validity (correlation Pearson Product moment between 0.167 and 0.793 > r-table (0.1381)) and reliability (Cronbach’s alpha 0.850 > 0.7).^{20,21} Validity and reliability tests were conducted on 200 local respondents. The SRQ item scores are 0 for the “no symptoms” category and 1 for the “yes symptoms” category. The SRQ consists of 29 questions divided into four parts: questions 1–20 to assess the presence of psychological symptoms (cut-off points: 6), question 21 to assess the use of psychoactive substances (cut-off points: 1), questions 22–24 to assess the presence of psychotic symptoms (cut-off points: 1), and questions 25–29 to determine the symptoms of post-traumatic stress disorder (PTSD) (cut-off points: 1). Further analysis was also carried out by categorizing psychological problems experienced based on SRQ items, such as decreased energy, somatic symptoms, depressive moods, and depressive thoughts.

We deployed descriptive statistics (like mean, average, standard deviation, and frequency distribution) and analytic statistics (like the Spearman-Rank test and Cramer’s V correlation test) to analyze the data. Data analysis was performed using the SPSS software program (version 20) with a significance level 0.05.

Results

Of the 9425 participants, most were female (68.68%), and the average age was 32 years (Mean = 31.85, SD: 12.856). Physical symptoms were experienced by 6.86% of the participants, and the most common were cough (35.24%), cold (30.29%), and sore throat (15.61%). Some (12.62%) participants reported experiencing psychological problems. Further analysis of the psychological problems revealed that the participants experienced decreased energy (27.60%), somatic symptoms (30.61%), depressive moods (15.55%), and depressive thoughts (16.80%). However, this study found that a few participants used psychoactive substances (0.42%), and participants experienced psychotic symptoms (15.73%). Interestingly, PTSD symptoms were the most common problems experienced by the participants (38.39%). The results of the descriptive analysis are presented in Table 1.

The statistical test results demonstrate a significant relationship between age and the emergence of psychological problems with a positive correlation ($P < 0.001$; $r = 0.129$). Based on Cramer’s V correlation test results, there was a significant relationship between gender and psychological problems ($P < 0.001$; $\phi = 0.080$). In addition, the Cramer’s V correlation test results showed a significant relationship between psychological problems

Table 1. Participants’ demographic information (n=9425)

Characteristics	Results
Age, mean (SD)	31.85 (12.856)
Age distribution, n (%)	
17-25 years	4456 (47.28)
26-35 years	1592 (16.89)
36-45 years	1503 (15.95)
46-55 years	1390 (14.75)
56-65 years	484 (5.14)
Gender (n (%))	
Male	2952 (31.32)
Female	6473 (68.68)
Perceived physical symptoms of COVID-19, n (%)	
Perceived	647 (6.86)
Not perceived	8778 (93.14)
Type of physical symptoms related to COVID-19, n (%)	
Fever	92 (14.22)
Cough	228 (35.24)
Cold	196 (30.29)
Sore throat	101 (15.61)
Severe difficulty in breathing (e.g., breathe very fast or speak in one word)	17 (2.63)
Mild-severe pneumonia	13 (2.01)
Psychological problems during the COVID-19 outbreak, n (%)	
Psychological problems exist	1189 (12.62)
No psychological problems exist	8236 (87.38)
Psychological problems category of SRQ, n (%)	
Decrease energy	
a. Problems exist	2601 (27.60)
b. No problem exists	6824 (72.40)
Somatic symptoms	
a. Problem exists	2885 (30.61)
b. No problem exists	6540 (69.39)
Depressive mood	
a. Problem exists	1466 (15.55)
b. No problem exists	7959 (84.45)
Depressive thought	
a. Problem exists	1583 (16.80)
b. No problem exists	7842 (83.20)
The use of psychoactive substances during the COVID-19 outbreak, n (%)	
There is a use of psychoactive substances	40 (0.42)
There is no use of psychoactive substances	9385 (99.58)
Psychotic symptoms during the COVID-19 outbreak, n (%)	
There are psychotic symptoms	1483 (15.73)
There are no psychotic symptoms	7942 (84.27)
PTSD during the COVID-19 outbreak, n (%)	
There are PTSD symptoms	3618 (38.39)
There are no PTSD symptoms	5807 (61.61)

and the use of psychoactive substances ($P=0.041$; $\phi=0.021$), psychotic symptoms ($P<0.001$; $\phi=0.127$), and PTSD symptoms ($P<0.001$; $\phi=0.095$) in the presence of physical symptoms during the COVID-19 outbreak. Further analysis of the psychological problem items revealed that the presence of physical symptoms related to COVID-19 was significantly associated with decreased energy ($P<0.001$; $\phi=0.111$), somatic symptoms ($P<0.001$; $\phi=0.156$), depressive moods ($P<0.001$; $\phi=0.107$), and depressive thoughts ($P<0.001$; $\phi=0.105$). The statistical analysis results are shown in Table 2.

Discussion

This study aimed to identify the relationship between physical health and psychological problems among Indonesian people during the COVID-19 outbreak. The findings suggest that while most participants did not experience physical and psychological problems, up to 6.86% experienced physical problems. The most common symptoms were colds, coughs, and sore throats, although this set of symptoms does not correspond to the most common symptoms of COVID-19, namely fever, fatigue, and dry cough.²² Meanwhile, as many as 12.62% of the participants revealed psychological problems due to COVID-19, including anxiety, tension, worry, restless sleep, and a lack of daily activities. The spread of COVID-19 caused psychological problems in the community. This finding aligns with a study in Spain; in that case, 36% of participants experienced moderate to severe psychological impacts, including anxiety, depression, and stress.²³ These feelings existed because the participants undertook self-isolation, had restrictions in social activities, and were lonely during the COVID-19 pandemic.^{24,25} The COVID-19 outbreak has had significant effects on life and has resulted in, for example, decreased sleep quality, disruption of activity schedules,

and changes to daily activities, all of which pose a risk of mental health problems.^{23,26,27}

Our study also found a significant relationship between age, gender, and psychological problems during the COVID-19 outbreak. In this study, the average age of the participants was 32 years. Another study found a higher prevalence of anxiety and depression during the COVID-19 outbreak in people aged <35 than in those aged >35 years.²⁸ During the COVID-19 pandemic, people lack control, especially young adults (<35 years) who seem stressed about the condition. COVID-19 affects their personal life, careers, professional life, and jobs, and at the same time, they fear COVID-19 infection.^{27,29} Our study also explains the gender-based differences in emotional responses, women experienced more anxiety and depression than men, although the results were insignificant. This pandemic affected woman's personal and professional lives at home. Pregnancy during the pandemic, increased anxiety, violence at home/workplace, fired and unemployed, especially for single mothers, domestic duties, and looking after sick family members.³⁰⁻³² This condition may have negative consequences in the long term.

This study proves a significant relationship between the physical symptoms experienced by Indonesian people and the emergence of psychological problems. The finding of this study, in line with research from eight countries in Americans, Asians, and Europeans, indicated that physical symptoms resembling COVID-19 infection were risk factors for adverse mental health outcomes. Physical symptoms positively and significantly correlated with psychological impact mediated by the need for health information, which correlates with adverse mental health outcomes.³³ Health factors such as being at risk or past for COVID-19 infection were associated with psychological problems (including anxiety and depression symptoms).³⁴ Asymptomatic during the initial COVID-19 infection was associated with better mental quality of life while having symptoms related to poor quality of life.³⁵

Psychological problems are significantly correlated with the physical symptoms during the COVID-19 outbreak. Mental health condition affects physical health and vice versa. Lifestyle choices and social interaction mediate physical health effects on mental health.³⁶ This study's results reinforce the previous finding that the amount of stress experienced by people has also increased due to uncertainty during the COVID-19 pandemic and the amount of incorrect information related to COVID-19.³⁷ Anxiety due to a pandemic can lead to negative community behavior, such as excessive medical consultation, avoiding healthcare despite being sick, and hoarding certain items. More broadly, anxiety can cause health anxiety in the face of the COVID-19 pandemic.³⁸

Anchored by the present study results, mental healthcare workers, such as psychiatrists, mental health nurses, clinical psychologists, and other mental health

Table 2. Spearman rank and Cramer's V correlation statistical analysis

Variable		P value	ϕ/r
Age ^a	Psychological problems	0.000**	0.129
Gender ^b	Psychological problems	0.000**	0.080
Feeling physical symptoms ^b	Psychological problems	0.000**	0.133
Decrease energy ^b	Perceived physical symptoms	0.000**	0.111
Somatic symptoms ^b	Perceived physical symptoms	0.000**	0.156
Depressive mood ^b	Perceived physical symptoms	0.000**	0.107
Depressive thought ^b	Perceived physical symptoms	0.000**	0.105
Use of psychoactive substances ^b	Perceived physical symptoms	0.041*	0.021
Psychotic symptoms ^b	Perceived physical symptoms	0.000**	0.127
PTSD symptoms ^b	Perceived physical symptoms	0.000**	0.095

Significant at ** $P<0.01$; * $P<0.05$.

a: analyzed using the Spearman rank test, b: analyzed using Cramer's V correlation coefficient test. Interpretation of Phi and Cramer's V: a)>0.25=very strong; b)>0.15=strong; c)>0.10=moderate; d) 0.05=weak; e)>0.00=no or very weak.

workers, are advised to provide regular mental health support. Mental healthcare is required for COVID-19 patients, people who contact patients, suspected cases, patients' families and friends, health workers who care for COVID-19 patients, and the general public who are in need.³⁹ Since participants in this study are the general public who have not been deemed positive for COVID-19, it is necessary to promote preventive efforts, especially in overcoming psychological problems during the COVID-19 outbreak. Psychological first-aid and counseling should be conducted for the public during this COVID-19 outbreak to help them reduce their psychological problems, improve their ability to manage stress and develop adaptive coping mechanisms for dealing with this situation.⁴⁰ Specifically, the types of mental healthcare and preventive efforts necessary must be identified. Promotional and preventive actions include examining physical and mental health problems and providing psychosocial responses to those with good mental health conditions or those with mental disorders. People who experience psychosocial problems can be given mental health interventions and psychological support.⁴¹

The study's limitations encompassed the reliance on self-reports to assess the physical symptoms experienced by participants and the lack of validation by healthcare professionals. Additionally, the temporal context of the research, conducted in the early stages of the COVID-19 pandemic, introduces the possibility that the physical symptoms investigated may vary from, or not comprehensively encompass, the entirety of contemporary COVID-19 manifestations. It is pertinent to note that this cross-sectional investigation utilized an online questionnaire. This methodology may present challenges for participants with limited technological literacy, potentially hindering their accessibility to the questionnaire. Finally, the cross-sectional design of this study might limit its contributions to the causal inference.

Conclusion

This study showed the significant relationship between physical health and psychological problems among Indonesian people during the COVID-19 outbreak. The study's findings indicated that age and gender are associated with psychological problems. Therefore, it is essential to eliminate factors that cause psychological problems by promoting the physical condition of the general population. Our results imply that in managing COVID-19, we have to pay attention to demographic factors and improve physical and psychological conditions during the COVID-19 Outbreak. Promotive efforts through health education programs/health campaigns and preventive efforts through early detection can also prevent the emergence of physical and psychological problems in the community.

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Competing Interests

None to be declared.

Research Highlights

What is the current knowledge?

- During COVID-19, changes in health status have triggered psychological problems in the Indonesian community.
- COVID-19 has impacted health status and caused physical symptoms in several body systems.
- In the general population, self-health rates related to COVID-19 symptoms are essential due to the increased fear of COVID-19.

What is new here?

- About 6.86% of participant's experienced physical symptoms, and the most common symptoms were cough (35.24%), cold (30.29%), and sore throat (15.61%).
- During COVID-19, the emergence of psychological problems, psychotic symptoms, and PTSD in participants were 12.62%, 15.73%, and 38.39%, respectively.
- The perceived physical symptoms during the COVID-19 outbreak are significantly associated with psychological problems, the use of psychoactive substances, psychotic symptoms, and PTSD.

Data Availability Statement

All data generated or analyzed during this study are included in this published article.

Ethical Approval

This study was approved by the Health Research Ethics Committee of the Faculty of Nursing Universitas Airlangga on May 9, 2020 (Ethical Approval No: 2005-KEPK). Informed consent was obtained from all individual participants involved in the study.

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