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Evaluation of Anxiety of Medical Personnel during the Coronavirus Outbreak in Tasikmalaya, Indonesia

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Quantitative Study

Abstract

Background: Coronaviruses are a large family of viruses that can cause respiratory infections. A factor that has recently caused a great deal of anxiety is anxiety associated with the coronavirus. The purpose of this study was to evaluate the level of anxiety among medical personnel exposed to the new coronavirus pandemic.

Methods: This descriptive, cross-sectional research was conducted on 210 medical personnel working in hospitals and health centers in Tasikmalaya, Indonesia. Medical personnel, who were exposed to or not exposed to this disease, were included in the study through census sampling in 2021. The data collection tools used include a demographic information questionnaire and the Corona disease anxiety scale (CDAS). Data analysis was performed using ANCOVA in Excel software.

Results: The mean score of anxiety of the medical personnel during the new coronavirus pandemic in Tasikmalaya was 30.02%. Furthermore, in the medical personnel, the mean score of mental symptoms (47.22%) was higher than physical symptoms (13.15%). The anxiety, and psychological, and physical symptoms scores for women was higher than for men personnel, and there was a significant difference between them ($P < 0.05$). The demographic variables of gender ($P = 0.001$), work experience ($P = 0.023$), and number of family members ($P = 0.004$) had a statistically significant relationship with anxiety ($P < 0.05$).

Conclusion: According to the results of the study, the level of anxiety among female personnel was higher than male personnel. As a result, holding training classes and stress management courses among all personnel, especially female personnel, should be considered.
Keywords: COVID-19; Medical staff; Anxiety

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Introduction

Coronavirus is an acute respiratory illness that was reported in Wuhan, China in late December 2019 and has now spread worldwide. The disease has symptoms such as cough, headache, muscle aches, and in rare cases digestive disorders (Joharifard, Nouri, Hazrati, & Fekryan-Arani, 2022). COVID-19 disease can sometimes cause serious lung damage and even result in death (Mazza et al., 2020). Research show a higher mortality rate following this disease in the elderly and people with underlying diseases such as diabetes, cancer, cardiovascular disease, immunodeficiency, etc. compared to healthy people (Mertens, Gerritsen, Duijndam, Salemink, & Engelhard, 2020). Although due to the novelty of this virus, the amount of information available about its pathogenicity as well as its methods of control and treatment is limited; thus, currently the best way to deal with it is to prevent the spread of the virus, which requires awareness and knowledge of the disease and its prevention and treatment methods (Shah, Mohammad, Qureshi, Abbas, & Aleem, 2021; Stankovska, Memedi, & Dimitrovski, 2020).

Given that the only way to control the disease is public health measures, severe quarantine measures were implemented around the world in a short period of time (Gamonal Limcaoco, Mateos, Fernandez, & Roncero, 2020). Quarantine can be applied voluntarily or compulsorily at the individual or community level, with voluntary and home-based quarantine usually preferred. Social distancing is also a form of quarantine performed to reduce interactions between people in a community and, on a large scale, to delay the epidemic in order to give the health care system the opportunity to become capable of accommodating large numbers of patients (Singh & Singh, 2020; Amsalem, Dixon, & Neria, 2021). This strict policy of quarantine will not be without psychological, social, and economic effects and will lead to social isolation, financial losses, discrimination, and so on (Khademian, Delavari, Koohjani, & Khademian, 2021). Moreover, limited human awareness of this disease, and the news and rumors related to it have caused and increased anxiety and fear, boredom, despair, etc. Therefore, psychological care to reduce stress is as necessary as attention to patients' health measures in dealing with this disease (Brailovskaia & Margraf, 2020). Numerous studies have reported that this epidemic can cause new psychiatric symptoms in people without mental illness and worsen the condition of people with mental illness, and increase the duration of quarantine by dramatically increasing these disorders with negative consequences. Studies have shown that medical personnel are no exception to this rule and that they are also affected by these psychological pressures (Özcan et al., 2021). This group may also be much more vulnerable than other people in the community and have higher rates of depression and anxiety (Kamal & Othman, 2020; Boyraz & Legros, 2020).

Mental health plays an important role in ensuring the dynamism and efficiency of any society and is one of the axes of health assessment. In fact, high mental health leads to happiness, vitality, and an increased sense of self-confidence in families, and poor metal health leads to anxiety, stress, and despair (Gritsenko et al., 2021). Given the pandemic status of the disease, which affects almost all important economic, political, and social aspects of the country, the discussion of the psychological effects of this disease on the mental health of individuals at different levels of society is very important. Therefore, in the current high-risk situation, it is necessary to identify people prone to psychological disorders at different levels of society in order to maintain the health of these people through appropriate psychological strategies (Spoorthy, Pratapa, & Mahant, 2020; AlAteeq, Aljhani, Althiyabi, & Majzoub, 2020). Fear and anxiety caused by a possible illness are destructive and can lead to mental disorders and stress

in people. Fear and stress are beneficial in the short term and allow the body to deal with stressors. Nevertheless, if this fear and stress and the body's response to increase cortisol levels and sympathetic stimulation persist, in the long run, it is destructive, and weakens the immune system and reduces the body's ability to fight (Scheidt, 2021). It is even associated with diseases such as coronary heart disease (CHD). Therefore, coping with stress makes society resistant to disease (Feihuan & Sollmann, 2020; Babadi, Bazmi, & Araban, 2021).

Many researchers have studied the psychological and physical effects of Covid-19. Qiu, Shen, Zhao, Wang, Xie, and Xu (2020) found that 53.8% of participants rated the psychological effects of the coronavirus outbreak as moderate or severe, 16.5% reported severe depressive symptoms, and 28.8% reported severe anxiety symptoms. Roy, Tripathy, Kar, Sharma, Verma, and Kaushal (2020) found that people with CHD have high health anxiety and anxiety levels. Li et al. (2020) found that as coronavirus levels increased, negative emotions such as anxiety, depression, and anger also increased, while positive emotions such as happiness decreased.

Contrary to the past, in which diseases were mostly related to the physical dimension of individuals, today, we are witnessing a high prevalence of mental disorders that threaten people's health more and more (Rokochinskiy et al., 2020). Most of the mental occupations of people are related to their job. People in any type of job are exposed to many risk factors called occupational hazards. Some of these harmful factors are related to the psychological dimension, and thus, threaten the mental health of people (Kooraki, Hosseiny, Myers, & Gholamrezanezhad, 2020). These factors include heavy workloads, long shifts, and so on. Anxiety is defined as a tangible emotional state characterized by feelings of tension, hallucinations, and increased activity of the autonomic nervous system. Some researchers believe that anxiety is the core of a variety of mental disorders such as post-traumatic stress disorder (PTSD) (Hasandoost, Mohammadi, Khademi, & Seddighi, 2021; Peyman & Olyani, 2020). Treatment personnel are directly related to the health of individuals in the community (Mohaddes Hakkak et al., 2021). In this regard, many studies have shown that the health of the people in a society depends on the health of its health system personnel (Sharma, Batra, & Nahar, 2020; Attarian, Feyzi, Jamali, & Firoozi, 2021). This issue arises from the fact that the health of the individual depends on the good performance of health personnel, and to be able to serve the people in the best way in their specialty, they must be highly satisfied with their job (Ghasemi, Ghofranipour, Shahbazi, & Aminshokravi, 2021; Li et al., 2020).

Despite the hospital personnel's constant exposure to harmful occupational factors, the sudden onset of a new coronavirus disease and its rapid spread may increase their anxiety (Herlambang, Wahyudiyono, Subiyantoro, Jumintono, Madu, & Hartati, 2021). Anxiety caused by this disease affects individuals in society. In the meantime, given that hospital personnel are at the forefront of the fight against the virus, it is necessary to pay attention to the health of these people, who are the guardians of the health of other sections of society. Given that few studies have been performed on COVID-19 disease, the need to investigate the psychological effects of this emerging phenomenon is felt, and the identification and presentation of an intervention for victims in the early stages is of particular importance. Therefore, the aim of this study was to evaluate stress and anxiety during the Covid-19 epidemic in treatment personnel.

Methods

A descriptive cross-sectional approach was used in this study. The study was conducted on a simple random sample of 210 of the 843 medical personnel working in

hospitals and health centers in Tasikmalaya, Indonesia, in 2021. Age of over 20 years, willingness to participate in the study, and working in hospitals and health centers in Tasikmalaya were the inclusion criteria. The exclusion criteria included lack of willingness to participate in the study and incomplete questionnaires. The participants were assured that their information and identities would not be disclosed for ethical reasons.

The information gathering tools used included a demographic information questionnaire and the Corona Disease Anxiety Scale (CDAS). The demographic questions were related to age, gender, marital status, academic degree, work experience, number of family members, and catching the coronavirus in previous months. The CDAS questionnaire was used to assess anxiety caused by the prevalence of coronavirus in Indonesia (Savas, Büyükerkmen, & Tunçdemir, 2021). The final version of this questionnaire has 18 items; items 1 to 9 measure psychological symptoms and items 10 to 18 measure physical symptoms. The items are scored on a 4-point Likert scale ranging from 0 to 3 (never = 0, sometimes = 1, most of the time = 2, and always = 3). Therefore, the total score of the questionnaire ranges between 0 and 54. Cronbach's alpha was used to determine the reliability of the first (α = 86.94%) and second factors (α = 84.37%) of this questionnaire, and the entire questionnaire (α = 89.41%). To assess the content validity of the questionnaire, it was presented to 4 experienced psychologists; 18 of the questionnaire's 25 items were approved.

To predict the anxiety of the studied personnel based on demographic variables at a significant level of $p < 0.05$, data analysis was performed using descriptive statistical tests (frequency, mean, percentage), inferential statistical tests (ANCOVA, variance), and multiple regression test in Excel software.

Results

The 210 participating personnel were mostly female, married, under 45 years of age, and had a bachelor's degree. About half of them had less than 10 years of work experience. Moreover, 64.28% of the participants were married and 20% had caught coronavirus. All demographic information are presented in table 1.

Table 1. The demographic characteristics of the personnel participating in the study

Variable		n (%)
Gender	Male	50 (76.19)
	Female	160 (23.81)
Age (years)	< 35	92 (43.8)
	35-45	88 (41.9)
	45-55	20 (9.5)
	> 55	10 (4.8)
Work experience (years)	< 10	105 (50)
	10-20	100 (47)
	> 20	5 (2.39)
Academic degree	Bachelor's	152 (72.38)
	Master's	38 (18.10)
	Doctorate	20 (9.52)
Marital status	Married	135 (64.28)
	Single	75 (35.72)
Number of family members	2	62 (29.52)
	3	65 (30.95)
	4	60 (28.57)
	5 and more	23 (10.96)
Caught coronavirus	Yes	42 (20)
	No	168 (80)

Table 2. Mean score of anxiety of hospital medical personnel during the new coronavirus pandemic

Item	Mean raw score	Mean score of 100
Anxiety	17.22	30.02
Mental symptoms	12.42	47.22
Physical symptoms	4.02	13.15

Table 2 presents the mean anxiety score of the medical personnel as a raw score based on the scale of the questionnaire and the converted score as a percentage. The mean score of anxiety of hospital medical personnel during the coronavirus pandemic was 30.02%. A lower score indicates less anxiety.

Moreover, mean score of mental symptoms (47.22%) was higher than physical symptoms (13.15%).

The results of statistical analyses in table 3 show that the scores of anxiety, and psychological and physical symptoms in women were significantly higher than men ($P < 0.05$); however, there was no significant relationship between other demographic characteristics and anxiety.

Multiple regression analysis showed that 18.1% of the variance of personnel anxiety is caused by demographic variables and the rest is caused by other variables. As the results presented in table 4 show, the model is meaningful. Beta coefficients showed that, among the demographic variables, the variables of gender, Work experience, and number of family members were related to anxiety ($P < 0.05$), and these variables predict the anxiety of the personnel under study.

Table 3. Mean and standard deviation of indicators in terms of demographic characteristics

Variable	Physical symptoms	P-value	Mental symptoms	P-value	Anxiety	P-value
	Mean ± SD		Mean ± SD		Mean ± SD	
Gender		0.008		0.001		0.002
Female	3.85 ± 4.35		13.82 ± 5.85		18.12 ± 9.55	
Male	2.15 ±2.29		9.11 ± 4.99		12.22 ± 6.98	
Age (years)		0.315		0.061		0.950
< 35	3.66 ±3.45		13.85 ± 5.67		18.22 ± 8.45	
35-45	2.85 ±4.42		10.85 ± 5.93		15.23 ± 8.89	
45-55	4.11 ±4.55		13.11 ± 6.03		14.72 ± 9.92	
> 55	4 -		10 -		10 -	
Work experience (years)		0.317		0.103		0.112
< 10	3.58 ±4.75		13.42 ± 6.35		17.35 ± 9.68	
10-20	2.75 ±4.25		12.44 ± 4.82		14.02 ± 7.65	
> 20	4.22 ±4.44		12.82 ± 5.85		18.22 ± 9.20	
Academic degree		0.712		0.158		0.389
Bachelor's	1.72 ±4.38		11.25 ± 7.25		14.25 ± 8.25	
Master's	3.8 ±4.52		11.45 ± 8.33		18.22 ± 8.88	
Doctorate	2.35 ±2.72		9.25 ± 6.82		10.56 ± 7.85	
Marital status		0.612		0.523		0.061
Married	3.12 ±3.32		12.22 ±5.59		16.22 ± 8.55	
Single	3.75 ±4.44		12.35 ±5.83		16.65 ± 9.02	
Number of family members		0.135		0.065		0.058
2	3.95 ±3.65		13.52 ± 6.02		17.46 ± 8.85	
3	4.35 ±5.02		13.13 ± 5.58		17.55 ± 9.95	
4	3.22 ±3.85		11.98 ± 5.66		15.35 ± 8.95	
≥ 5	2.2 ±3.91		10.75 ± 5.95		12.32 ± 9.03	
Caught coronavirus		0.935		0.832		0.889
Yes	3.62 ±3.95		12.35 ± 6.88		16.55 ± 8.95	
No	3.72 ±4.32		12.32 ± 5.58		16.02 ± 10.65	

SD: Standard deviation

Table 4. Predicting the anxiety of the studied personnel based on demographic variables

Independent variable	β	T	P-value	95% Confidence interval	
				Upper bound	Lower bound
Gender	-0.285	-4.251	0.001	-8.65	-3.22
Age	-0.211	-1.688	0.075	-5.95	0.42
Work experience	0.285	2.115	0.023	0.26	4.65
Academic degree	0.111	1.326	0.155	-0.39	2.73
Marital status	0.024	0.268	0.745	-2.63	3.47
Number of family members	-0.221	-2.765	0.004	-3.55	-0.73
Caught coronavirus	-0.023	-0.345	0.688	-3.85	2.64

The importance of each of the studied parameters in terms of percentage is shown in figure 1. As can be seen in the figure, the gender parameter had the highest impact and the marital status parameter had the lowest impact.

Discussion

This paper aimed to assess the anxiety level of medical personnel exposed to the new coronavirus pandemic. Fear and anxiety have become a pandemic that affects the behavior of people in society. Therefore, this study was conducted to investigate the level of anxiety of medical staff in the face of the pavilion of Covid-19 virus in hospitals and health centers in Tasikmalaya. The sessions held to increase awareness of the COVID-19 pandemic increased happiness by 62%. They also reduced negative emotions, which in turn reduced anxiety, depression, and anger by 28%, 23%, and 54%, respectively. Medical personnel, especially nurses and doctors, are in close contact with infected patients, and play an important role in controlling infection. The results of this study showed that the mean score of anxiety of hospital staff during the coronavirus pandemic Tasikmalaya was 30.02%. The results of the present study showed that the mean score of mental symptoms was higher than physical symptoms in medical personnel. Most of the impact has been on the female personnel. Moreover, according to the results of the study, the level of anxiety is related to gender, work experience, and the number of family members. The other factors examined in this paper did not play an effective role in causing anxiety.

The rapid spread of the coronavirus has created an emergency in global health.

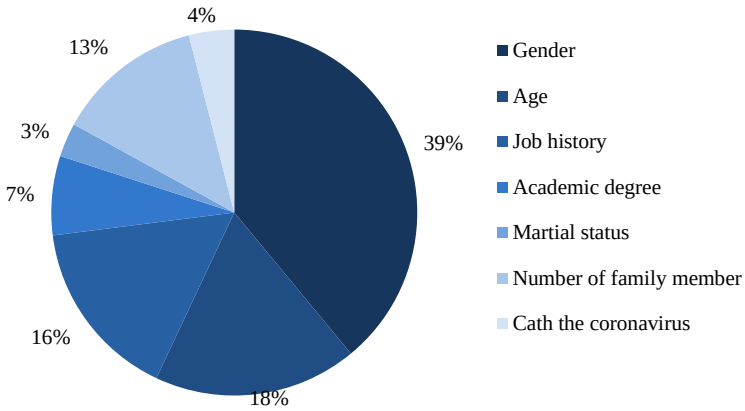

Figure 1. Percentage of importance of the studied parameters

This contagious disease raises concerns about public physical health and causes a number of psychological ailments. Thus, based on the results of the present study, it seems that caring for and maintaining the mental health of medical care personnel during an infectious disease is very important. The infection of medical personnel with the new coronavirus is a potential threat to the mental health of other members of the medical team and can cause them stress. In such cases, so it is necessary to provide medical care personnel with useful and practical training.

Despite the relatively low level of anxiety in medical personnel in the present study, more extensive studies are needed to monitor personnel protective behaviors in pandemics and their relationship with anxiety levels. However, continuous training and retraining about the unknown and new behaviors of the new coronavirus as well as its various symptoms, embedding and holding training sessions to repeat and promote safety tips and observe health protocols are among the measures that can reduce the anxiety caused by activities in medical settings through resolving common issues. The results of the present study showed that the medical personnel had appropriate and low levels of anxiety in the face of the new coronavirus that may have positive impact on their organizational function. Moreover, holding meetings to increase scientific awareness and reduce negative emotions in employees resulted in a reduction in negative emotions and increase in negative emotions.

Conclusion

When anxiety affects a larger population, it can lead to panic and depletion of resources. It can also lead to limitations in daily activities. Because of anxiety, people adopt different lifestyles and dietary modifications. These may have a negative effect on mental health. Therefore, dealing with mental health problems in epidemic conditions is very important.

Conflict of Interests

Authors have no conflict of interests.

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