Public Health of Indonesia
E-ISSN: 2477-1570 | P-ISSN: 2528-1542

Original Research

The relationship between work stress and quality life among Indonesian health workers during the COVID-19 pandemic

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Doi: https://dx.doi.org/10.36685/phi.v8i3.633
Received: 4 August 2022 | Revised: 28 August 2022 | Accepted: 16 September 2022

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Abstract

Background: During the COVID-19 pandemic, health workers are directly involved in many healthcare activities. If the pandemic lasts for a long time, the situation of ambiguity and full of threats will be unimaginable. It will potentially worsen individual emotions, increase work stress, and affect the quality of life of health workers.
Objective: To identify relationships between work stress levels and quality of life for health workers during the COVID-19 pandemic.
Methods: A cross-sectional design was used in this study, involving 90 health workers in a public health center in Ende Regency, East Nusa Tenggara Province, Indonesia, selected using total sampling. WHOQOL – BREF questionnaire and Stress Scale were used to collect data. Descriptive statistics and Chi-square were used for data analysis.
Result: Most respondents did not experience work stress (77.8%) and had a good quality of life (93.3%). There was a significant relationship between work stress and the quality of life of health workers during the COVID-19 pandemic (p <0.001).
Conclusion: Work stress is a significant factor influencing the quality of life. Therefore, interventions to reduce the stress level of the health workers are necessary.

Keywords: health; health workers; nurses; quality of life; work stress; COVID-19; Indonesia

Background

Coronaviruses are a large family of viruses that can cause mild to severe symptomatic disease. Two types of coronavirus are known to cause severe symptomatic diseases, such as the Middle East respiratory syndrome (MERS) and severe acute respiratory syndrome (SARS). Coronavirus disease 2019 (COVID-19) is a new type of disease that humans have never previously identified. The virus that causes COVID-19 is called Sars-CoV-2. The spread of this coronavirus is zoonotic, transmitted via animals and humans (Kementerian Kesehatan Republik Indonesia, 2020c; Tosepu et al., 2020)

Common symptoms of COVID-19 infection include acute respiratory distress such as fever, cough, and shortness of breath. The average incubation period

is 5-6 days, with the longest incubation period being 14 days. In severe cases of COVID-19, it can cause pneumonia, acute respiratory syndrome, kidney failure, and even death. Clinical signs and symptoms reported in the majority of cases were fever. Some conditions were difficulty breathing, and extensive pneumonia infiltrates in both warps were shown in their X-Rays (Kementerian Kesehatan Republik Indonesia, 2020a; Tosepu et al., 2021)

The World Health Organization (WHO) China Country Office reports a case of pneumonia of unknown etiology in Wuhan City, Hubei Province, China. On 7 January 2020, China identified pneumonia of unknown etiology as a new type of coronavirus disease, COVID-19. Then on 30 January 2020, WHO declared it a public health emergency of international concern (PHEIC). The increase in COVID-19 cases occurs quite quickly and has spread between countries. Therefore, the President of the Republic of Indonesia declared the status of the Emergency Response stage on 17 March 2020 (Kementerian Kesehatan Republik Indonesia, 2020d)

The global prevalence of COVID-19 as of 11 June 2020 was 7,145,539 confirmed positive cases in 215 infected countries (Kementerian Kesehatan Republik Indonesia, 2020b). The prevalence of COVID-19 in Indonesia, as of 11 June 2020, was 34,316 positive cases in 34 provinces in Indonesia, including East Nusa Tenggara Province, with 103 positive cases (Kementerian Kesehatan Republik Indonesia, 2020e). In addition, the incidence of COVID-19 in Ende Regency as of 11 June 2020 was 12 people, of which ten people (83.33%) came from Raporendu Village, under the Health Center in Ende Regency.

Several studies show that in addition to physical problems, individuals also experience psychological issues in dealing with the COVID-19 pandemic. Psychological responses vary depending on individual readiness and experience (Agung, 2020). Wheaton et al. (2012), in a study on anxiety facing swine flu (H1NI) in 2009, showed that swine flu anxiety was affected by health anxiety, fear of contamination, and sensitivity. A survey conducted by Iskandarsyah and Yudiana (2020) in Indonesia shows that 78% of participants were worried about the spread of COVID-19, and 23% felt unhappy or in depressed condition.

Wang et al. (2020) conducted a study involving 1,210 respondents from 194 cities in China. The results showed that 53.8% of respondents experienced moderate or severe psychological impacts from the outbreak, 16.5% reported moderate to severe depressive symptoms, 28.8% reported mild to severe anxiety, and 8.1% reported moderate to serious stress levels. Li et al. (2020) also conducted the results of a similar study on 17,865 active Weibo users with machine learning models. The results of this study indicate an increase in negative emotions (anxiety, stress) and a decrease in positive emotions (happiness, life satisfaction) during the COVID-19 pandemic.

The negative emotional response due to the COVID-19 pandemic is not only experienced by the public but also by health workers. A study in Singapore showed that COVID-19 harmed health workers because it can cause anxiety, stress, post-traumatic stress disorder (PTSD), and depression (Tan et al., 2020). As the front line in handling COVID-19, health workers often face uncertain, full of risk, and pressured situations, so they are vulnerable to experiencing psychological disorders (Agung, 2020).

In this critical situation, health workers are directly involved in many healthcare activities, such as diagnosing and treating patients with physiological disorders and psychological symptoms. Along with the increasing number of confirmed cases, the workload of health workers has also increased. Besides the lack of personal protective equipment (PPE), the absence of specific medicines and inadequate emotional support can contribute to the mental burden of these health workers (Lai et al., 2020; Lee et al., 2007; The State Council of China, 2020). Work-related stress is a potential cause of concern for healthcare workers. It is associated with anxiety, including multiple work activities, depression in the face of the coexistence of countless cases of death, long work shifts with diverse occupations, and the demands of care for patients with COVID-19. Therefore, this is a crucial indicator of psychological fatigue for health workers (Adams & Walls, 2020).

During this COVID-19 pandemic, people who are most at risk of developing psychological disorders are people who have close or direct contact with the community. One of which is health workers at the

public health center. Human resources or health workers at public health centers act as professionals implementing health services. Health workers are expected to be able to carry out their main tasks and functions by following the education and skills they acquired (Handayani & Ma'ruf, 2010). Setyawan (2002) states that health workers are strategic resources that can optimally use physical and psychological resources.

According to Hasanah et al. (2020), the role of the public health center, especially the health workers, is vital in controlling COVID-19 cases, considering that the public health center is a first-level health facility. The role of health workers in public health centers during the COVID-19 pandemic started from planning activities/prevention (health promotion, public health, family, and nutrition), disease detection, and disease control and responding by following their authority as First-Rate Health Facilities (hence shortened as *FKTP*) (Kementerian Kesehatan Republik Indonesia, 2020b). The public health center is described as the cutting edge of health services throughout Indonesia. In this case, health workers are the front line in breaking the chain of COVID-19 transmission and continue to provide other services, such as implementing the first-level Community Health Efforts (or *UKM*) and Individual Health Efforts (or *UKP*).

Currently, the end of the emergency due to this pandemic is uncertain. If the COVID-19 pandemic lasts for a long time, the situation of ambiguity and full of threats will be unimaginable. If allowed to continue, it can potentially worsen individual emotions. The stress experienced by health workers will last even during the pandemic. According to Health and Safety Executive (2018), health professionals are shown to have the highest stress levels, with prevalence rates of 2,500, 2,190, and 3,000 cases per 100,000 workers during 2011/2012, 2013/2014, and 2014/2015. If excessive work stress is not handled through proper handling, it will lead to impaired quality of life (Hardani, 2016)

Quality of life is a subjective assessment of individuals regarding their current living conditions when viewed from some of their crucial aspects of life (Nofitri, 2009). The individual's quality of life is assessed by physical, psychological, and social relationships and environment (Larasati, 2009). Individuals with impaired quality of life will affect all dimensions of a person's life. If it contributes to an individual's physical domain, they will experience health problems such as physical weakness and disease susceptibility. In the psychological domain, an individual will experience a psychological condition that is depression. It affects his mental health. In social relations, people will experience poor social relations with other humans because they are in uncomfortable situations. In addition, in the environmental domain, a person tends to ignore his environment (Hardani, 2016).

Based on a preliminary survey conducted by the research team on 6 May 2020, data were obtained that 90 health workers were directly involved in treating patients who were confirmed positive for COVID-19. Based on the results of brief interviews, some health workers revealed problems related to handling this case. They are a significant increase in confirmed cases, increased workload, inadequate PPE, limited personnel with an increasing number of work activities, and uncertainty over the end of this pandemic which then causes anxiety. In addition, there was no research linking work stress and the quality of life of health workers during the COVID-19 pandemic. Based on the description of the problem and considering the importance of the role of health workers, this study aimed to analyze the relationship between stress levels and the quality of life of health workers during the COVID-19 pandemic.

Methods

Study Design

A cross-sectional study design was used to analyze the relationship between stress level and the health workers' quality of life at the Public Health Center during the COVID-19 pandemic.

Samples

Using total sampling, 90 health workers were involved in this study at the Public Health Center in Ende Regency, East Nusa Tenggara, Indonesia.

Instruments

This study used three questionnaires: the demographic, work stress scale, and quality of life questionnaire. The demographic questionnaire consists of age, sex, health workers, education level, income per month, and length of work. The Stress Scale of Manaf et al. (2019) was used, with a Cronbach alpha value of >0.7. The Stress Scale has

21 questions, with the answer no ever, sometimes, often, and almost always. Suppose the answer is never, given a value of 0, sometimes 1, often 2, and almost always a value of 3. Furthermore, the answers are categorized into: not stressed and stressed. To measure the quality of life, WHOQOL – BREF was used, consisting of 26 question items where two questions are about the quality of life in general and 24 other questions cover four domains, namely physical, psychological, social, and environmental health (World Health Organization, 2004).

Data Analysis

Data were analyzed using descriptive statistics and Chi-square tests.

Ethical Consideration

This study was approved by the Ethics Committee of Poltekkes Kemenkes Kupang on 11 June 2021 (number: LB.02.03/1/0035/2021). Each participant was ensured to sign an appropriate informed consent prior to data collection.

Results

Table 1 shows that most of the respondents were aged 26-35 years (74.4%), female (83.3%), had a profession as a midwife (51.1%), had a Diploma level (83.3%), obtained monthly income below the minimum wage for East Nusa Tenggara (NTT), and had work experience 3 - 5 years (70%).

Table 1 Characteristics of Respondents

Respondents' Characteristics	*N* = 90	
	n	%
Age* (year)		
17 – 25 (Late Adolescence)	12	13.3
26 – 35 (Early Adulthood)	67	74.4
36-45 (Late Adulthood)	11	12.2
Sex		
Male	15	16.7
Female	75	83.3
Health Workers		
Doctors	2	2.2
Nurse	25	27.8
Midwife	46	51.1
Medical record staff	2	2.2
Pharmacist	2	2.2
Public health instructor	5	5.6
Sanitarian	2	2.2
Administrative worker	2	2.2
Analyst	3	3.3
Nutritionist	1	1.1
Education Level		
S-1 (Bachelor) / Profession	15	16.7
Diploma (D-III/DIV)	75	83.3
Income Per Month		
Moderate	19	21.1
Low	71	78.9
Length of Work		
> 15 years	3	3.3
11-15 years	8	8.9
6-10 years	16	17.8
3 - 5 years	63	70.0

Table 2 shows that most of the respondents did not experience work stress (77.8%), had good physical health (93.3%), good psychological condition (92.2%), good social relations (92.2%), and a good environment (92.2%). In addition, the results also showed that most of the respondents had a good quality of life (93.3%).

Table 2 Description of work stress and quality of life

Research variable	N = 90	
	n	**%**
Work Stress		
Stressed	20	22.2
Not stressed	70	77.8
Quality of Life		
Bad	6	6.7
Good	84	93.3
Quality of Life Domain 1 (Physical Health)		
Bad	6	6.7
Good	84	93.3
Quality of Life Domain 2 (Psychological)		
Bad	7	7.8
Good	83	92.2
Quality of Life Domain 3 (Social)		
Bad	7	7.8
Good	83	92.2
Quality of Life Domain 4 (Environmental)		
Bad	7	7.8
Good	83	92.2

Table 3 Relationship between work stress and quality of life

		Quality of Life				***p-value***
		Bad		**Good**		
		n	**%**	***n***	**%**	
Work Stress	Stressed	5	25.0	15	75.0	<0.001*
	Not stressed	1	1.4	69	98.6	

Table 3 shows a statistically significant relationship between work stress and health workers' quality of life (p <0.001). The results of this study are supported by the data showing that 25% of respondents who experienced work stress had a bad quality of life. Meanwhile, 98.6% of respondents who did not experience work stress had a good quality of life.

Discussion

The results of this study revealed that there was a significant relationship between work stress and quality of life. Work stress is a feeling of pressure experienced by employees in dealing with work. It can be seen from the symptoms, including unstable emotions, feeling uneasy, being alone, having trouble sleeping, smoking excessively, being unable to relax, being anxious, tense, nervous, increasing blood pressure, and experiencing digestive disorders (Manaf et al., 2019).
According to Wijaya et al. (2019), work stress is a significant factor influencing the quality of life. Work stress will affect all dimensions or domains of a person's quality of life. The results of this study are in line with a study conducted by Hardani (2016), which shows a relationship between work stress and the quality of life of ICU nurses (p = 0.004). Wijaya et al. (2019), in their study, also show that there is an influence between work stress on quality of life (p <0.001). It presents that work stress contributed 66.8% influence on the quality of life, and there was a negative Beta value of -0.817, indicating an inverse relationship between work stress and quality of life. In other words, the higher the work stress, the lower the quality of life; vice versa, the lower the work stress, the higher the quality of life.

Work stress can contribute to an individual's physical domain. It is indicated that someone who experiences work stress will experience health problems, such as physical weakness and disease susceptibility. Work stress also affects the psychological domain. When someone experiences work stress, they will have a depressed psychological condition which affects mental health.

In addition, work stress affects the domain of social relations. It means someone who experiences work stress has poor social relations with other humans because they are in uncomfortable conditions. Last, work stress affects the environmental domain because someone who experiences work stress

tends to ignore their environment (Tosepu et al., 2021; Wijaya et al., 2019).

Conclusion

Work stress is a significant factor in influencing the quality of life so that it can affect all dimensions (physical, psychological, social relationships, and environmental domains) of a person's quality of life. Therefore, it is essential for the local health office to pay attention to this issue and hold some refreshing activities for health workers in order to reduce work stress and improve quality of life.

Declaration of Conflicting Interest
None.

Funding
None.

Acknowledgment
We express our deepest gratitude to all respondents and parties involved in this research.

Author Contribution
All authors were involved from the beginning of the research activity to the publication process.

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Cite this article as: Paschalia, Y. P. M., Doondori, A. K., Kurnia, T. A., & Seto Se, B. R. (2022). The relationship between work stress and quality life among Indonesian health workers during the COVID-19 pandemic. *Public Health of Indonesia, 8*(3), 96-102. https://dx.doi.org/10.36685/phi.v8i3.633