

# Determinants influencing healthcare workers' anxiety levels during the COVID-19 pandemic at Cut Nyak Dhien Regional General Hospital, West Aceh

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## ABSTRACT

The COVID-19 pandemic has had a significant impact on society, particularly on healthcare professionals who have been at the forefront of the pandemic response. They have faced a high risk of virus exposure and have been burdened with extraordinary responsibilities in saving lives. Since the onset of the pandemic until February 2022, thousands of healthcare workers have been exposed to the virus, and some have even lost their lives. Therefore, this study was conducted to understand the factors influencing the level of anxiety among healthcare workers during the COVID-19 pandemic. The research employed a cross-sectional survey approach and was conducted at Cut Nyak Dhien Regional General Hospital, West Aceh Regency, in November 2021. The study population consisted of 396 healthcare workers, with a sample of 304 healthcare workers selected using purposive sampling. Data collected were analyzed using logistic regression. The findings revealed that the majority of healthcare workers at Cut Nyak Dhien Hospital experienced high levels of anxiety during the COVID-19 pandemic, with 72.37% experiencing panic anxiety, while 27.63% experienced non-panic anxiety. Significant factors influencing anxiety levels included family support, with an odds ratio (OR) of 2.1 and a p-value of 0.017, sufficient knowledge with an OR of 0.5 and a p-value of 0.084, and adequate provision of Personal Protective Equipment (PPE) with an OR of 2.1 and a p-value of 0.026. However, there was no significant relationship between anxiety levels and variables such as age, profession, marital status, highest education level, and comorbid conditions.

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## INTRODUCTION

Coronavirus Disease 2019 (COVID-19) is an illness that first emerged in Wuhan, China in 2019 and continues to be a global issue to this day (Harapan et al., 2020; Lai et al., 2020; Paules et al., 2020). In

March 2020, COVID-19 was officially recognized as a concerning global pandemic. This disease has a serious impact on the respiratory system, ranging from common flu-like symptoms to the potential for death. The primary mode of transmission is through respiratory droplets, such as coughing and sneezing (Hou et al., 2020; Hui et al., 2020). The World Health Organization (WHO) notes that as of July 2021, there were more than 5.15 million confirmed cases, with around 4.51 million people recovering, while the death toll reached 146 thousand. The primary focus is on vulnerable groups, such as the elderly, infants, pregnant women, and the elderly, who are at a higher risk of contracting the disease (Jebril, 2020; World Health Organization 2019.). The COVID-19 pandemic has had a significant impact on various aspects of life. Apart from the health dimension, the economy and social aspects have also been affected. The continuous increase in confirmed cases has raised concerns among healthcare workers about the escalation of their workload and the crucial need for self-protection. The government has implemented measures such as self-isolation, maintaining physical distance, regular handwashing, and personal hygiene practices to break the chain of transmission (Anderson et al., 2020; Li et al., 2020; Mohapatra et al., 2020). Healthcare workers play a crucial role in providing optimal healthcare services in their respective fields, including doctors, nurses, midwives, psychologists, nutritionists, physiotherapists, and public health experts. During the COVID-19 pandemic, they are at the forefront of handling, preventing, and caring for COVID-19 patients. However, the increasing pressure due to the rising number of confirmed cases every day has led to anxiety and psychological distress among healthcare professionals. (Moitra et al., 2021; Suresh et al., 2021) (Hacimusalar et al., 2020; Liu et al., 2020). In Indonesia, data from the Indonesian National Nurses Association records that thousands of healthcare workers have been exposed to the COVID-19 virus. As of February 2022, there were 5,089,637 healthcare workers confirmed positive, with 146,044 fatalities and 4,444,210 recoveries (Adams & Walls, 2020; Marjan Fuadi & Artikel, 2020). Several factors contribute to the increased anxiety experienced by female nurses, including inadequate availability of personal protective equipment (PPE), concerns about transmitting the virus to other family members, and nurses' knowledge about the pandemic (Haryanto et al., n.d.; Nasus et al., 2021; Purnamasari et al., 2021). The insufficient availability of PPE can heighten anxiety levels among nurses as they fear contracting the virus themselves and transmitting it to their loved ones. The lack of proper protective gear not only jeopardizes their own health but also raises concerns about potentially endangering the health of their family members. This fear of transmission to their loved ones adds an additional layer of stress and anxiety to their already challenging work environment. (Wijayanti et al., 2022) Furthermore, the knowledge level of nurses about the virus and its transmission can also influence their anxiety levels. Insufficient knowledge or misinformation may lead to a heightened sense of fear and uncertainty. Nurses who are well-informed about the virus and its preventive measures are more likely to experience a sense of control and confidence in their ability to protect themselves and their families (Haryanto et al., n.d.). On the other hand, a lack of accurate information or misconceptions can contribute to heightened anxiety and distress.

The anxiety experienced by healthcare workers is a response to threatening and unforeseen situations, such as the COVID-19 pandemic. They undergo changes in concentration, anxiety, sleep disturbances, decreased productivity, and interpersonal conflicts. Some even face more serious mental health issues. Factors influencing their psychological well-being include separation from family, abnormal situations, fear of contagion, feelings of failure in dealing with poor prognosis, and limitations in technical facilities and medical equipment (Apriyanti et al., 2022) (Hacimusalar et al., 2020; Zhang et al., 2020; Zhu et al., 2020). Previous studies on the topic have identified several gaps that are addressed in the current research. While previous studies have examined the level of anxiety among healthcare workers during the COVID-19 pandemic, the specific factors influencing anxiety levels have not been extensively explored. The current research aims to fill this gap by investigating the influence of factors such as family support, knowledge levels, and the provision

of Personal Protective Equipment (PPE) on anxiety levels among healthcare workers. Additionally, previous studies have not focused on a specific healthcare facility or region, whereas the current research is conducted at Cut Nyak Dhien Regional General Hospital in West Aceh Regency, providing insights into the experiences of healthcare workers in that particular setting. Furthermore, healthcare workers also face challenges in maintaining their physical and mental health, with the risk of experiencing depression, anxiety, severe stress, and fatigue. Other risk factors include feelings of lack of support, concerns about personal health, fear of transmitting the infection to family or others, feelings of isolation, uncertainty, social stigma, excessive workload, and insecurity while caring for COVID-19 patients. Currently, the COVID-19 spread situation in West Aceh, particularly in Meulaboh, has reached the red zone, with a confirmed case count of 1,157 individuals. Cut Nyak Dhien Regional General Hospital in Meulaboh reports treating 362 cases. Against this backdrop, the research aims to identify factors influencing the anxiety levels of healthcare workers during the COVID-19 pandemic at Cut Nyak Dhien Regional General Hospital in Meulaboh, West Aceh Regency.

## RESEARCH METHOD

This research employs a descriptive research design with a Cross-Sectional approach, aiming to identify several factors through simultaneous observations to achieve the desired results. The study was conducted at Cut Nyak Dhien Meulaboh Regional General Hospital in November-December 2021. The research population consists of all healthcare professionals working at Cut Nyak Dhien General Hospital, totaling 396 healthcare workers. The study sample includes all healthcare professionals working at Cut Nyak Dhien Hospital, amounting to 304 healthcare workers, selected using the Purposive Sampling method. The research sample consists of respondents meeting inclusion criteria, such as being healthcare professionals involved in healthcare services, including civil servants and non-permanent employees (THL), and willing to participate as respondents. Exclusion criteria include healthcare professionals not providing direct services (administrative and structural roles), on leave, or unwilling to participate. Data collection methods include both primary and secondary data. Primary data is collected through interviews using a modified 11-item HARS questionnaire, including items related to anxiety and tension. Respondents provide information on healthcare professionals' biodata and characteristics such as age, education, medical history, marital status, and profession type. In addition to primary data, secondary data are used as supporting information relevant to this research, obtained from healthcare personnel documents to complement incomplete information. To test instrument (questionnaire) validity, the researcher conducted validity and reliability tests. Validity was assessed using Pearson correlation, measuring the correlation between each variable score and the total score. The obtained r-table value was compared to a significance level of 5%, which resulted in a product moment r-table value of 0.361. The validity test took place from October 29 to November 1, 2021, utilizing questionnaires and data processing with SPSS 22 software. The reliability test in this research aims to assess the confidence level of the instrument (questionnaire) used in data collection. The reliability test used Cronbach's alpha, measuring the consistency level among items in the questionnaire. A variable's reliability is considered good if the Cronbach's alpha value is  $> 0.06$ . After the questionnaire trial with 30 respondents, it was found that all variables had Cronbach's alpha  $> 0.06$ , indicating that the measurement instrument is reliable. Variable reliability levels can be categorized as very high (0.800-1.000), high (0.600-0.800), moderate (0.400-0.600), low (0.200-0.400), or very low (0.000-0.200). Furthermore, univariate analysis was performed using Logistic Regression tests in STATA 13 to describe the frequency distribution and proportion of all examined variables. This includes respondent characteristics such as age, marital status, profession type, and highest education, as well as other variables such as family support, knowledge, PPE availability, and comorbidities. Bivariate analysis also utilized Logistic Regression tests in STATA 13 to examine the relationship between factors influencing healthcare workers'

anxiety levels during the COVID-19 pandemic. The results can be expressed with  $H_0$  (null hypothesis) accepted if the  $p$ -value  $> 0.05$ , indicating no significant relationship between the dependent and independent variables.  $H_0$  is rejected, and  $H_a$  (alternative hypothesis) is accepted if the  $p$ -value  $< 0.05$ , indicating a significant relationship between the dependent and independent variables. Multivariate analysis also employed Logistic Regression tests in STATA 13 to determine the influence among variables or which variables have the most significant relationship with others. In terms of research ethics, the researcher obtained research permits from the Cut Nyak Dhien Meulaboh Regional General Hospital Data and Information Center before starting the study. Additionally, the researcher adhered to research ethics principles, such as obtaining informed consent from respondents, maintaining anonymity and data confidentiality, and ensuring that research results would be processed ethically. All these steps were taken to ensure that the research was conducted with due regard for essential ethical aspects.

## RESULTS AND DISCUSSIONS

The Cut Nyak Dhien Meulaboh Regional General Hospital is situated in Gampong Drien Rampak, Johan Pahlawan subdistrict, West Aceh district. Geographically, it is clearly demarcated by Jalan Sisingamangaraja to the north, Lorong Banteng to the south, Jalan Gajahmada to the west, and MIN/MAN schools to the east. Established in 1968, it encompasses an area of approximately 2.8 hectares and operates as a type B hospital under the administration of the West Aceh district government. Over the years, Cut Nyak Dhien Meulaboh Hospital has undergone various transformations, including accreditation assessments, enhancements in quality, and the development of its facilities.

**Table 1.** Frequency distribution of characteristics, levels of anxiety for health workers during the covid-19 pandemic

No	Variable	F	%
	Anxiety Level		
1	No anxiety	84	27.63
	Panic	220	72.37
	Age		
2	< 35 years	147	48.36
	36-45 years old	96	31.58
	> 45 years	61	20.07
	Marital status		
3	Not married yet	73	24.01
	Married	231	75.99
	Profession		
4	Minimal interaction	43	14.14
	Close interaction	261	85.86
	Last education		
5	S2/specialist	12	3.95
	DIV/S1	149	49.01
	D3	143	47.04
	Family support		
6	There is Support	190	62.50
	No Support	114	37.50
	Knowledge		
7	Good	220	72.37
	Enough	84	27.63
	Provision of PPE		
8	Complete	57	18.75
	incomplete	247	81.25
	Comorbid Diseases		
9	There isn't any	156	51.32



No	Variable	Level of anxiety				Total		OR	(95%CI)	P-Value
		Don't panic		Panic		F	%			
	There is	64	33.68	126	66.32	190	100	2,3	1.3-4.2	0.003
	There isn't any	20	17.54	94	82.46	114	100			
	Total	84	27.63	220	72.37	304	100			
		Knowledge								
6.	Good	58	26.36	162	73.64	220	100	0.7	0.4-1.3	0.424
	Enough	26	30.95	58	69.05	84	100			
	Total	84	27.63	220	72.37	304	100			
		Provision of PPE								
7.	Complete	24	42.11	33	57.89	57	100	2,2	1.2-4.1	0.008
	No	60	24.29	187	75.71	247	100			
	Total	84	27.63	220	72.37	304	100			
8		Comorbid disease								
	There isn't any	39	25.00	117	75.00	156	100	0.7	0.4-1.2	0.293
	There is	45	30.41	103	69.69	148	100			
	Total	84	27.63	220	72.37	220	100			

Based on the data analysis presented in Table 2 at Cut Nyak Dhien Hospital during the COVID-19 pandemic, it can be observed that the proportion of healthcare workers who do not experience panic anxiety is higher in the age group under 35 years, at 31.97%, while the proportion for those above 45 years is 26.23%, and the age group between 36-45 years is 21.88%. Interestingly, a higher level of anxiety appears to occur in the 36-45 age group, with 78.13% of them experiencing panic anxiety, followed by the above 45 age group at 73.77%, and the under 35 age group at 68.03%. Statistical test results indicate that there is no significant relationship between age and the level of anxiety among healthcare workers at Cut Nyak Dhien Regional General Hospital during the COVID-19 pandemic (OR = 1.6, 95%CI = 0.9-3.0, P-value = 0.088). However, the 36-45 age group has a 1.6 times greater risk of experiencing panic anxiety compared to healthcare workers under 35 years old. In addition to age, other factors such as marital status, profession type, last educational level, knowledge, availability of personal protective equipment (PPE), and the presence of comorbid diseases have also been evaluated in this study. Although marital status does not significantly affect the level of anxiety, family support has a significant impact, with healthcare workers who do not receive family support having a 2.3 times higher risk of experiencing panic anxiety (OR = 2.3, 95%CI = 1.3-4.2, P-value = 0.003). Meanwhile, profession type, last educational level, knowledge, availability of PPE, and the presence of comorbid diseases do not show a significant influence on the level of anxiety among healthcare workers at Cut Nyak Dhien Regional General Hospital during the COVID-19 pandemic.

**Multivariate analysis**

**Table 3.** Multivariate logistic regression analysis (P<0.25)

Anxiety Level	OR	95%CI	P-value
	Age		
36-54 years old	1.8	0.93-3.49	0.076
>45 years	1,2	0.61-2.71	0.505
	Marital status		
Marry	0.9	0.45-1.77	0.770
	Profession		
Close interaction	0.4	0.20-1.13	0.095
	last education		
DIV/S1	0.4	0.83-2.08	0.286
DIII	0.5	0.10-2.63	0.438
	Family support		
No support	2.1	1.14-3.92	0.017
	Knowledge		

Enough	0.5	0.28-0.99	0.048
Incomplete	2.1	1.09-4.31	0.026
There is	0.8	0.50-1.47	0.589

Table 3, the result of a meticulous multivariate analysis, provides a deeper understanding of interrelated factors affecting the anxiety levels of healthcare workers during the COVID-19 pandemic at Cut Nyak Dhien Regional General Hospital. This analysis involves several variables identified as potential influencers of anxiety levels, allowing us to gain richer insights into their psychological dynamics in facing a high-pressure situation. The analysis results indicate that family support significantly impacts the anxiety levels of healthcare workers. With an odds ratio (OR) of 2.1, a 95% confidence interval (95% CI) ranging from 1.14 to 3.92, and a p-value of 0.017, these findings emphasize the crucial role of family in alleviating anxiety levels. Factors such as emotional, social, and practical support provided by families can offer much-needed support in coping with the pressures and stress associated with their work during a pandemic.

Furthermore, the variable of sufficient knowledge also has a significant influence on anxiety levels. With an OR of 0.5, a 95% CI ranging from 0.28 to 0.99, and a p-value of 0.048, these results underscore the importance of adequate knowledge in reducing anxiety levels. Healthcare workers with sufficient understanding of the disease, preventive measures, and treatment procedures may feel more confident in facing the pandemic situation. The provision of Personal Protective Equipment (PPE) also stands out as a factor related to anxiety levels. With an OR of 2.1, a 95% CI ranging from 1.09 to 4.31, and a p-value of 0.026, these results highlight the significance of having adequate PPE availability. During a pandemic, sufficient PPE provision is a key factor in maintaining the physical and mental well-being of healthcare workers. A shortage of PPE can increase their fear and anxiety related to the risk of contracting COVID-19. Although there were previous assumptions that profession, marital status, or education level could influence the anxiety level, these findings affirm that these factors may not play a significant role in anxiety levels during the pandemic (Apriyanti et al., 2022; Satria et al., 2021). Thirdly, the study highlights several factors associated with a significant level of anxiety. Family support has proven to be influential, with the results showing a significant relationship between family support and anxiety level (OR = 2.5, P-value = 0.001). This illustrates that healthcare workers with good family support tend to have lower levels of anxiety. Family support, including emotional support and appreciation, can provide motivation and encouragement in carrying out their duties during the pandemic (Halawa, 2021). Fourthly, the research results indicate that the provision of Personal Protective Equipment (PPE) also plays a crucial role. There is a significant relationship between adequate provision of PPE and the anxiety level of healthcare workers (OR = 2.4, P-value = 0.003). Adequate provision of PPE helps healthcare workers feel safer and more confident in performing their duties without excessive concerns about the transmission of COVID-19. Adequate provision of Personal Protective Equipment (PPE) plays a very important role in supporting healthcare workers in carrying out their duties during the COVID-19 pandemic. Adequate PPE is not only an essential need but also a key component that can help healthcare workers feel safer and more confident when facing this risky situation. Fifthly, this research evaluates the relationship between healthcare workers' knowledge and anxiety levels. The analysis results show that in the bivariate analysis, there is no significant relationship between knowledge and anxiety levels. However, in the multivariate test, a significant relationship was found between insufficient knowledge and anxiety levels (OR = 0.05, P-value = 0.007). This indicates that healthcare workers with insufficient knowledge may experience higher levels of anxiety. Accurate knowledge about COVID-19 is crucial for improving the performance and mental well-being of healthcare workers. Proper knowledge about COVID-19

can also help reduce anxiety that may arise due to uncertainty. This pandemic has created a lot of uncertainty, both in terms of physical and economic health. Healthcare workers are often on the front lines, facing direct risks of virus transmission. With strong knowledge of how to protect themselves and patients, they can feel more prepared to face this situation and reduce excessive worries (Nurdiana et al., 2021; Priscilla & Lestari, 2020). Moreover, accurate knowledge can also provide healthcare workers with tools to educate the community more effectively about COVID-19. They can serve as trustworthy sources of information, helping the public understand the importance of preventive measures and reducing the spread of false information or myths that can increase anxiety (Sabarudin et al., 2020). Finally, this study investigated the relationship between comorbid diseases and the anxiety levels of healthcare workers. The results showed that there was no significant influence between the presence of comorbid diseases and anxiety levels (OR = 0.7, P-value = 0.236). This finding may be surprising, given the assumption that individuals with comorbidities are more vulnerable to infection and COVID-19 complications. However, the results of this study indicate that the presence of comorbid diseases may not significantly affect the anxiety levels of healthcare workers. Overall, this research provides crucial insights into the factors influencing the anxiety levels of healthcare workers during the COVID-19 pandemic. These findings can serve as a foundation for the development of better support strategies and programs for frontline healthcare workers. In a broader context, this study contributes valuable knowledge to understand various factors that can impact healthcare worker anxiety during crisis situations like the COVID-19 pandemic. This knowledge is not only useful for evaluating the current pandemic's impact but can also aid in planning more effective support strategies and programs for those on the frontline of pandemic response (Tiara et al., 2021). The utilization of these findings as a basis for the development of further support strategies and programs becomes crucial. With a better understanding of the factors influencing anxiety, we can design more focused and effective approaches to provide support to healthcare workers. This could involve training in stress management, improved mental health services, and real efforts to reduce the workload they bear.

## CONCLUSION

Most healthcare workers at Cut Nyak Dhien Regional General Hospital experienced anxiety levels during the COVID-19 pandemic, with the majority of them facing panic anxiety. This finding indicates a significant impact of the pandemic situation on the mental well-being of healthcare professionals. Furthermore, the study also discovered that a lack of family support and limited availability of personal protective equipment (PPE) have a significant correlation with the anxiety levels of healthcare workers. This underscores the importance of social support and adequate equipment to protect the mental health of healthcare professionals. However, the research also indicates that factors such as age, profession, marital status, education level, knowledge, and comorbid conditions do not have a significant correlation with anxiety levels. Therefore, planning interventions and mental well-being support for healthcare workers should be more focused on influencing factors, such as family support and the provision of PPE.

The study conducted at Cut Nyak Dhien Regional General Hospital focused on examining the anxiety levels experienced by healthcare workers during the COVID-19 pandemic. The findings revealed that a significant majority of healthcare professionals faced panic anxiety, indicating the profound impact of the pandemic on their mental well-being. The study also identified a significant correlation between anxiety levels and factors such as a lack of family support and limited availability of personal protective equipment (PPE). This underscores the importance of social support and adequate provision of PPE in protecting the mental health of healthcare workers. However, the research did not find any significant correlations between anxiety levels and factors such as age, profession, marital status, education level, knowledge, or comorbid conditions. Consequently, interventions and mental health support for healthcare workers should prioritize influencing factors such as family support and the provision of PPE. The research makes

important contributions to the field of science and has implications for everyday life and society. In the field of science, the study adds to the existing knowledge by highlighting the significant impact of the COVID-19 pandemic on the mental well-being of healthcare workers, specifically in terms of anxiety levels. This contributes to a deeper understanding of the psychological challenges faced by healthcare professionals during times of crisis.

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