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Analysis of The Relationship Between The Contact History of Patients Suspected for Covid-19 and Psychological Disorders in Nurses at Hospital X, Demak District

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Abstract

The aim of this inquiry was to examine the relationship between contact history with suspected COVID-19 patients and the level of psychological distress among nurses at Hospital X, Demak Regency. A retrospective survey was conducted involving 60 nurses, representing the entire nursing population at the hospital. The analysis showed that contact history with suspected COVID-19 patients was associated with depression. The P-value is 0.008, the anxiety level shows a P-value of 0.004, the stress level shows a P-value of 0.0027, PTSD shows a P-value of 1.000. The results of the analysis show that there is a significant relationship, namely anxietyas many as 62.5% experienced moderate anxiety. Nurses in the Emergency Department showed a high rate of PTSD, at 41.7%. Furthermore, factors such as gender, age, and length of service were also statistically associated with contact history with suspected COVID-19 patients. A statistical analysis revealed a significant correlation between contact history with suspected COVID-19 patients and PTSD levels in nurses. These findings provide important insights into the potential psychological impact on nurses who have had contact with suspected COVID-19 patients. In the real world, this research can help develop plans to support nurses' mental well-being during the pandemic.

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INTRODUCTION

In 2019, the coronavirus (COVID-19) outbreak posed a serious threat to public health worldwide. The first cases of the disease were identified in Wuhan City, Hubei Province, China. This respiratory illness spread rapidly in its home cities and other countries, prompting the World Health Organization (WHO) to declare COVID-19 a pandemic on March 11, 2020. As of June 1, 2020, the World Health Organization (WHO, 2020) reported a total of 6,040,609 cases and 370,657 deaths worldwide. Indonesia is one of the countries with the highest number of COVID-19 cases, ranking 24th in the world with 135,000 cases and 6,021 deaths (COVID-19 Task Force, 2020). As of September 15, 2021, the Government of the Republic of Indonesia has reported 4,178,164 COVID-19 cases and 139,682 deaths (CFR: 3.3%), as well as 3,953,519 recoveries (Ministry of Health, 2021). According to Ministry of Health data (2020), there were an additional 2,036 positive COVID-19 patients in Central Java. The highest number of cases in Central Java were in Semarang (8,733), Demak (2,322), and Kudus (2,564). This number surpassed DKI Jakarta, which was in second place with an additional 1,431 COVID-19 cases.

The 2019 coronavirus, or COVID-19, has spread rapidly and is endangering public health. All healthcare workers face tremendous stress due to COVID-19, particularly related to high infection rates, inadequate protection, longer working hours, negative patient feedback, the rise of stigma, and a lack of social support from their communities (Xiang et al., 2020). Anxiety, depressive symptoms, feelings of fear, worry, and acute stress are some of the psychological reactions experienced by nurses during the COVID-19 pandemic. During the COVID-19 pandemic, nurses must provide optimal services to the public related to infection prevention and control (Ridlo et al., 2021).

Healthcare workers, who are responsible for breaking the chain of transmission, bear a tremendous responsibility. This excessive work pressure can lead to excessive fatigue, risk of infection, and frustration over patient deaths (Zhang et al., 2021). The COVID-19 pandemic has caused a long-term shift and put a strain on global health systems. (Ardebili et al., 2021; Q. Liu et al., 2020), impacting mental disorders in health workers (Khanal et al., 2020).

The COVID-19 pandemic has had a significant psychological impact on society (Suci, 2020). Anxiety varies from mild to moderate to severe.(C.-Y. Liu et al., 2020; F. Liu et al., 2020)It was reported that at the beginning of the COVID-19 pandemic, health workers caring for COVID-19 patients had anxiety levels ranging from 22.60% to 36.30%, with the highest levels of anxiety experienced by nurses, ranging from 15% to 92%.(Chen et al., 2022; Sakr et al., 2022; Kam Pham et al., 2023)

Internal factors, such as gender, age, education, marital status, fear of infection, comorbidities, and a history of anxiety, are causes of anxiety for healthcare workers when caring for COVID-19 patients. External factors, such as age, gender, and education, also contribute to anxiety. External factors include the availability of PPE, having older family members, workplace conditions and environment, direct contact, hospital type, profession, and patient honesty (Hermanto et al., 2021). Rates of depression among healthcare workers are higher relative to their gender, with female nurses showing higher levels of affective symptoms compared to male nurses, and the prevalence of affective symptoms among healthcare workers is estimated at 38.9%. This creates psychological challenges for nurses working as primary healthcare workers caring for COVID-19 patients (Batra et al., 2020).

Some of the psychological impacts felt by the public during the pandemic include post-traumatic stress disorder (PTSD), confusion, anxiety, frustration, fear, and feelings of helplessness (Xiong et al., 2020). According to Cénat et al., (2021), the rates of depression, anxiety, and insomnia were 23.2%, 22.8%, and 38.9%, respectively. Fear of transmitting the virus to friends, family, and coworkers is a common and dangerous psychological response. During the COVID-19 pandemic, nurses and healthcare workers also experienced symptoms such as anxiety, stress, anger, denial, trauma, and depression (Asmundson & Taylor, 2020). The rates of fear, depression, and insomnia among healthcare workers in Pontianak City during the

COVID-19 pandemic were 57.6%, 52.1%, and 47.9%, respectively. Healthcare workers treating COVID-19 positive patients were more likely to experience depression, insomnia, and anxiety than healthcare workers who did not experience these symptoms (Hanggoro et al., 2020). Research by Sunet et al (2020) found that nurses experienced stress when caring for COVID-19 patients because they were afraid of being in a negative-pressure treatment room and worried about transmitting the virus to others.

Furthermore, Haozheng's research shows that frontline workers experience stress due to concerns about their personal safety and the risk of spreading the virus to their families. A group of nurses experienced trauma due to the COVID-19 pandemic. Aritonang's (2021) research found that the majority of respondents experienced anxiety as an indicator. The psychological impact of COVID-19 on Chinese healthcare workers consisted of five dimensions: PTSS, anxiety, depression, fatigue, and sleep disturbance. According to Nana et al (2020) the prevalence of PTSS, mild to severe anxiety and depression is estimated at 31% (25–37%), 37% (32–42%) and 39% (25–52%) (Pitoy et al., 2021). Families and healthcare workers play a crucial role in helping maintain mental health during the COVID-19 pandemic (Muhammad, 2021). Nurses can experience Post-Traumatic Stress Disorder (PTSD) due to the anxiety they experience, which can lower their immunity and increase psychological distress while providing healthcare. Research conducted by Aulia and Arsy (2022) found that 31.6% of parents experienced post-traumatic stress disorder (PTSD) after the coronavirus pandemic, and 68.4% of them were asymptomatic.

Based on the results of a preliminary study conducted by researchers through interviews with 5 nurses who were exposed to suspected Covid-19 patients and 5 nurses who were not exposed to suspected Covid-19 patients, it was found that 60% of nurses who were exposed to Covid-19 patients felt tired due to work fatigue, anxiety and fear of transmitting it to children and the elderly who had comorbidities even though they had used complete PPE so they carried out self-isolation at home and it was found that 40% of nurses who were not exposed to suspected Covid 19 felt afraid and worried about carrying the virus due to limited use of PPE and inaccurate swab test results.

Given the high number of COVID-19 cases, there has been an increase in the incidence of trauma and anxiety among nurses working in healthcare, which can increase the risk of Post-Traumatic Stress Disorder (PTSD). Therefore, researchers wanted to conduct a study of nurses with a history of contact with COVID-19 patients regarding Post-Traumatic Stress Disorder, anxiety, depression, and work stress at Hospital X, Demak Regency.

METHOD

An analytical study was conducted to examine the relationship between the independent variable, namely history of contact with suspected COVID-19 patients, and the dependent variable, namely psychological distress among nurses in the hospital. The study population consisted of nurses in the operating room, emergency unit, intensive care unit (ICU), polyclinic (POLI), RANAP (Nursing and Emergency Department), and HD. The study was conducted from October to September 2023. The total population of 60 nurses was selected.

The sample size in this study was determined using total sampling/saturated sampling, which involves taking all members of the population as samples.

The independent variable used in this study is the influence of contact history with suspected Covid-19 patients. The dependent variable in this study is psychological disorders in nurses, defined as conditions related to anything that affects the mind, especially function or motivation. Depression is a psychological condition characterized by changes in a person's feelings, cognition, and behavior (Alford, 2009). Job stress is a condition that causes physical and mental imbalance, which impacts an employee's feelings, way of thinking, and working conditions (Asih, 2018), and anxiety is an emotional condition that arises from stress, characterized by feelings of tension, worried thoughts, and physical responses such as a rapid pulse, high blood pressure, and others (Muyasaroh, 2020).

The data collection method in this study

was by distributing questionnaires to respondents. The questionnaires were used to determine the relationship between contact history with suspected COVID-19 cases and psychological disorders in nurses. Data were collected using a Google Form distributed with the assistance of the ward leader. To demonstrate that respondents were willing to participate voluntarily and not under duress, they were given an explanation of how to complete the questionnaire. Throughout the study, respondents were monitored to ensure the data obtained was genuine and valid. This process was carried out by colleagues because it was easier to conduct apperception before conducting the study and the researchers' educational backgrounds were similar.

Univariate data analysis aimed to explain and describe the characteristics of each variable, followed by bivariate analysis using the chi-square test. All data analyses were performed using SPSS. This study is registered with the Health Research Ethics Committee of Semarang State University under registration number 359/KEPK/EC/2023.

RESULTS AND DISCUSSIONS

This study analyzes the contact histories of suspected COVID-19 patients with psychological disorders. The sample consisted of nurses working in hospitals. Data were collected using a questionnaire. The data were collected using Google Forms and provided guidance to ensure appropriate illustrations during the COVID-19 outbreak.

Contact history with suspected COVID-19 patients was supplemented by questionnaires completed by 60 respondents. Respondents with PTSD scores of 45-85 were considered high, those with moderate PTSD scores of 30- 44, and those with mild PTSD scores of 28-29.

Table 1. Characteristics of Research Respondents

Characteristics	Category	History of Exposure to Suspected Covid19			
		Yes		NO	
		N	%	N	%
Age	n (average)		33 (30.6)		27 (30.3)
Ward	Emergency Room	11	91.7	1	8.3
	ICU Room	3	30.0	7	70.0
	Gabriel	5	45.5	6	54.5
	IBS	2	22.2	7	77.8
	HD	1	25.0	3	75.0
	Poli	3	60.0	2	40.0
	Lydia	8	88.9	1	11.1
Gender	Man	11	64.7	6	35.3
	Woman	22	51.2	1	48.8
Length of work	>= 5 Years	20	52.6	8	47.4
	< 5 Years	13	59.1	9	40.9
History of Covid Patient Care	Yes	12	50	2	50.0
	NO	21	58.3	15	41.7

The average age of respondents who were exposed to suspected Covid-19 was 30.6 years, while the average age of respondents who were not exposed to suspected Covid-19 was 30.3 years. The majority of respondents exposed to suspected Covid-19 were in the emergency unit (91.7%), followed by the Lidya ward (88.9%), the polyclinic (60%), the Gabriel room (45.5%), the ICU (30%), the hemodialysis unit (25%), and the central surgical installation (22.2%), with female gender (59%), work experience <5 years (70%), and a history of treating Covid patients (17%).

Chi-Square analysis showed no significant relationship between history of contact with COVID-19 patients and depression levels with a P-value of 0.008.

Covid-19 Patient Contact History	Depression Levels						
	Moderate Depression		Normal		Total		P-Value
	N	%	N	%	N	%	
Yes	19	79.2	5	20.8	24	100	0.008
No	36	100	0	0.0	36	100	
Anxiety Level							
	Moderate Anxiety		Mild Anxiety		Total		P-Value
	N	%	N	%	N	%	
Yes	15	62,5%	9	37,5%	24	100	0,004
No	34	94,4%	2	5,6%	36	100	
Job Stress Level							
	Severe Stress		Moderate Stress		Total		P-Value
	N	%	N	%	N	%	
Yes	5	20.8	19	79.2	24	100	0.027
No	19	52.8	17	47.2	36	100	
PTSD							
	PTSD High		PTSD Medium		Total		P-Value
	N	%	N	%	N	%	
Yes	11	45,8%	13	54.2%	24	100%	1,000
No	17	47,2%	19	52,8%	36	100%	

Figure 1. Relationship between contact history of suspected Covid-19 patients and depression, anxiety, and work stress

Chi-Square analysis shows that there is a significant relationship between history of contact with COVID-19 patients and anxiety levels with a P-value of 0.004.

Chi-Square analysis showed no significant relationship between history of contact with COVID-19 patients and levels of work stress with a P-value of 0.0027.

The results of the Chi-square analysis showed no significant relationship between the history of exposure to suspected Covid-19 patients and the incidence of PTSD with a P-Value = 1.000.

The COVID-19 pandemic has not only created a global health crisis but has also highlighted the complex relationship between physical health and mental well- being. The psychological impact of contact with suspected COVID-19 patients is a crucial component of this relationship. A growing body of research is focusing on the history of such contact and its relationship to the development of post-traumatic stress disorder (PTSD). Because healthcare workers are on the front lines and those in close contact with infected individuals face the threat of exposure, understanding the historical context of these contacts is crucial to understanding their long-term impact on mental health.

a. Concern

The study results showed that nurses with a history of contact with suspected COVID-19 patients experienced mild anxiety in 63.5% and moderate anxiety in 37.5%. Although there was no significant correlation between a history of contact with suspected coronavirus patients and anxiety, anxiety can disrupt daily activities. Anxiety is a normal human emotion, as it allows individuals to identify and alert themselves to potentially dangerous situations. However, uncontrolled and persistent anxiety can disrupt daily routines (Andri et al., 2021).

b. Depression

The study found that the majority of nurses with a history of contact with suspected COVID-19 patients were in the normal depression category (20.8%), and 79.2% experienced moderate depression. Therefore, in general, the impact of contact with suspected COVID-19 patients experienced by nurses during the pandemic was moderate. Although nurses with a history of contact with suspected COVID-19 patients generally experience depression, nurses are directly more susceptible to mental disorders, one of which is depression (Lai et al., 2020; Lu et al., 2020).

c. Work stress

The study results showed that 79.2% of nurses with a history of contact with suspected COVID-19 patients experienced moderate work stress, and 20.8% experienced low work stress. Work stress is a condition that causes physical and mental imbalance, impacting a person's emotions and thought processes. Stressed individuals often become irritable, aggressive, and unable to relax due to constant worry. When a nurse is unable to complete the work assigned by a doctor, they experience work stress. This means that when an employee is unable to meet the demands of their job, they experience stress (Rahmadyrza, 2015).

d. Post-traumatic stress disorder (PTSD)

The study found that 45.8% of nurses with a history of contact with suspected COVID-19 patients experienced high levels of PTSD, and 54.2% of those with moderate levels of PTSD

experienced high levels of PTSD. Post-Traumatic Stress Disorder (PTSD) is a psychiatric disorder that can arise as a result of a traumatic event. It is characterized by symptoms such as intrusive thoughts, nightmares, flashbacks, avoidance behavior, negative mood swings, and hyperarousal. While there may not be specific research focusing solely on contact with suspected

COVID-19 patients and its direct impact on the development of PTSD, research suggests that exposure to traumatic events can increase the risk of developing PTSD. For example, during previous epidemics such as SARS (severe acute respiratory syndrome), research showed that people who were quarantined and experienced psychological distress were more likely to experience PTSD (Chamaa et al., 2021).

PTSD can be caused by genetic factors, past trauma, coping mechanisms, gender, age, employment status, education level, marital status, and a history of mental disorders (Schiraldi, 2009). The study found that 20 of the participants were women (51.2%) who experienced high levels of PTSD. According to Kusmawati (2016), the incidence of Post-Traumatic Stress Disorder (PTSD) in men is 5–6%, and in women 10–12%, according to Psychology Today. Because women are more susceptible to hormonal changes, the incidence of PTSD is twice as high as in men. Both are associated with a higher risk of trauma, especially during pregnancy and approaching menopause.

Due to differences in social, political, economic, and historical conditions, trends in vulnerable age groups vary from country to country. According to research, 33.3% of people aged 30 to 40 experience PTSD. According to Wijayaningsih (2014), one of the causes of psychological disorders is developmental, especially in older adults. Therefore, stress levels increase with age. Wijayaningsih (2014) found that compared to people under 30, those over 30 were more likely to experience PTSD. Sugieng et al. (2014) stated that the process of maturity or maturity level can influence a person's mindset.

Employment status can affect stress levels and create feelings of discomfort, increasing the likelihood of developing PTSD. Another study found that nurses working in emergency rooms and intensive care units were at higher risk of PTSD than nurses working in regular care settings (Hosseininejad et al., 2019). The study found that 91.7% of nurses were more susceptible to PTSD, especially those in the Emergency Department (ED). One sociodemographic factor associated with the risk of trauma exposure is employment status. Studies show that low-income individuals and those working in extreme conditions are more susceptible to PTSD (Atwoli et al., 2015).

Long-term studies conducted during the pandemic have begun to highlight how contact with suspected COVID-19 patients directly impacts PTSD. Research suggests that individuals with a history of such contact are at higher risk for PTSD, with factors such as the intensity of the patient's treatment outcome, frequency of exposure, and availability of support systems being crucial. Understanding the distinct relationship between the historical context of contact and the development of PTSD further contributes to designing effective interventions and support mechanisms for those most at risk.

Analyzing the history of contact with suspected COVID-19 patients and its association with PTSD has significant implications for public health strategies and mental health interventions. Recognizing the psychological impact of this pandemic on those directly exposed underscores the importance of prioritizing mental health support, destigmatizing help-seeking, and implementing proactive measures to reduce the incidence of PTSD. This historical perspective serves as a crucial foundation for an informed, compassionate, and targeted approach to supporting the mental well-being of those who have had direct contact with COVID- 19 patients while the world continues to grapple with the impact of the pandemic. However, I can provide some general information about PTSD related to traumatic events.

It's important to note that the COVID-19 pandemic has been associated with various stressors, such as fear of infection, social isolation, grief over the loss of loved ones, financial hardship, and challenges related to healthcare. These factors can contribute to psychological distress and potentially increase the risk of developing mental health conditions,

including PTSD.

A history of contact with suspected COVID-19 patients is associated with an increased risk of post-traumatic stress disorder (PTSD) among healthcare workers and the general public. Several studies have highlighted the impact of direct contact with infected patients and increased exposure to occupational stress on healthcare workers' mental health (Torales et al., 2020; Al Falasi et al., 2021; James et al., 2022). Furthermore, quarantine and isolation measures implemented to control the COVID-19 pandemic have been associated with negative psychological impacts, including an increased risk of depression, anxiety, insomnia, and acute stress symptoms (Taquet et al., 2021; Wang et al., 2021). Furthermore, research has demonstrated a bidirectional relationship between COVID-19 and psychiatric disorders, suggesting that a COVID-19 diagnosis is associated with an increased incidence of first-time psychiatric disorders in patients without a prior psychiatric history. These findings underscore the importance of addressing the mental health implications of contact with suspected COVID-19 patients and implementing appropriate support measures for individuals at risk of PTSD. The analysis of contact histories with suspected COVID-19 patients has several limitations. First, the researcher used a retrospective design, which left respondents somewhat confused about their past and current experiences. However, this design allows for a clear picture of contact histories with suspected COVID-19 patients with post-traumatic stress disorder (PTSD). Therefore, a causal relationship can be clearly demonstrated through the odds ratio.

This study used secondary and primary data. The researcher was directly involved in data collection. While collecting data using Google Forms, some communications were not conveyed to respondents, such as events and emotions experienced during the pandemic.

Information bias is a difference in thinking between researchers and respondents that results in inaccuracies in completing questionnaires. Information bias is likely due to respondents' inaccurate recall of answers to questions, also known as recall bias. This bias is the potential for information bias, particularly regarding behavior, feelings, and emotions. Another possible bias is the "clever Hans" effect, which occurs when respondents intentionally change their answers to please the researcher.

External validity is the ability to generalize research results. With a participation rate of 63.6%, the research results can be generalized to the broader study population or district.

CONCLUSION

Based on the analysis of this study, there was a significant correlation between a history of contact with suspected COVID-19 patients and psychological disorders, specifically anxiety, at 62.5%. Nurses with high levels of Post-Traumatic Stress Disorder (PTSD) were those working in the Emergency Department (41.7%). Other factors statistically associated with a history of contact with suspected COVID-19 patients were gender, age, and employment status.

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