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Anxiety among nurses in caring for COVID-19 patients: a qualitative study

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Abstract

This study aimed to explore anxiety among nurses in caring for Coronavirus Disease 2019 (COVID-19) patients. A qualitative descriptive design was used and the number of participants was 13 nurse managers selected using the purposive sampling method. Data collection was conducted using in-depth interviews coupled with a tape recorder and camera following the consent of participants, while framework analysis was used to analyze data. The results showed that participants, comprising 12 females and one male, had work duration in the range of 1-10 years. The identified five major themes included: i) anxiety response, ii) risk factor, iii) protective factor, iv) interventions, and v) anticipated support from nurses. Nurses were found to experience anxiety when caring for COVID-19 patients, underscoring the need for mental health and psychosocial support to reduce risk factors, increase protective factors, and improve coping mechanisms, fostering resilience. The results provided data to help nurses overcome anxiety when facing cases of infection such as the COVID-19 pandemic. Furthermore, this study offered valuable insights for the government and hospitals in establishing policies regarding the importance of mental and psychological health support to maintain the well-being of nurses.

Introduction

The Coronavirus Disease 2019 (COVID-19) pandemic is caused by a respiratory system infection attributed to the Coronavirus.¹ This pandemic has rapidly spread globally with a prevalence of around 218 million cases and a national count of 4

million cases.² The associated death toll worldwide is 4 million cases, while in Indonesia, the number of death cases is estimated at 134,930. The percentage of cases is 1.83% lower than the global cases, but the death rate is 3.3% higher. These data underscore the highly infectious nature of COVID-19 and its impact on the psychology of nurses.

The onset of COVID-19 has led to the occurrence of anxiety among nurses working in hospitals, resulting in a feeling of worry and unease in response to stressful and threatening situations. Anxiety is associated with unpleasant feelings, restlessness, fear, and worry, representing a normal reaction to stress and threats.³ This condition arises due to changes in the work environment of nurses, such as an increase in infection cases, injuries, and the traumatic experiences of caring for patients, which can affect productivity.³⁻⁵ Based on the data, the increase in infection cases, such as the COVID-19 pandemic, leads to a two times risk of anxiety among nurses. Before the pandemic, the prevalence of anxiety among nurses was 12% in Europe, 5.6% in China, and 20% in intensive care units.³ Meanwhile, the prevalence during the pandemic was 54.3% in Portugal,⁶ 33.4% in China, and 46.5% in intensive care units.^{7,8} In Indonesia, the prevalence of anxiety before and during the COVID-19 pandemic was 18%,⁹ and 33% respectively.¹⁰

As the primary healthcare team that accompanies clients, there is a need to investigate anxiety among nurses in relation to caring for COVID-19 patients. Nurses can adapt to stressors to effectively help clients but studies conducted in Indonesia or Medan regarding this topic are limited. Therefore, this study aimed to investigate anxiety among nurses in caring for COVID-19 patients.

Materials and Methods

This study used a descriptive qualitative design to explore anxiety among nurses, and participants were 13 nurse managers sampled from several hospitals in Medan City. Participants were recruited using a purposive sampling method with the following inclusion criteria: nurse managers in the COVID-19 unit and able to provide informed consent. Data collection was carried out from November to December 2022, and this study comprised two stages, namely preparation and implementation. In the

preparation stage, permission was obtained from hospitals and the UI Faculty Nursing Ethics Commission with No. KET-264/UN2.F12.D1.2.1/PPM.00.02/2022, while in the implementation stage, a quiet room was prepared to conduct in-depth interviews. During the interviews, only the interviewer and participant were present, sitting face-to-face to ensure eye contact. Furthermore, interrogative questions were avoided to ensure participants could answer questions openly. Interviews were conducted according to agreement with the participants and took 30 to 60 minutes. Study data including recordings stored and protection carried several years. A tape recorder and camera were used to assist the study process with the permission of the participants. Field notes were used to record nonverbal communication supporting or contradicting verbal communication and record environmental conditions. After the interview process, the results were presented in a transcript for validation and clarification to participants, while framework analysis was used to analyze the data. Framework analysis which consists of 5 steps: data familiarization, identification of thematic framework, indexing all studies related to the framework, conducting a data index summary using charts/charting and mapping/interpretation. Analysis was carried out using tools manually. The trustworthiness of the findings were indicated by data credibility, conformability, dependability, and transferability. Data credibility is carried out by prolonged engagement with data and findings, triangulating data sources, methods and investigators and carrying out member checking and identifying different findings. To ensure accurate descriptions and coding, researchers consulted with supervisors/experts. To confirm the results, researchers used more than two questions to explore the phenomenon. Coding is used during the analysis process to increase dependability. Confirmability is carried out through audits of the research process. To obtain rich data with information that can be confirmed, researchers recruited participants who have experience caring for COVID-19 clients. The researcher investigates and describes all the details of the research starting from selecting participants, collecting and analyzing data and comparing the data obtained. Transferability carried out in this research is by providing a research report as a thick description.

The data were considered credible because they came directly from informants, who

were the most trustworthy sources of information. The generated keywords, codes, and themes were re-read and re-checked by another researcher. Conformability of data was also supported by the fact. The triangulation of data collection by combining interviews with field observation to increased the trustworthiness of the findings. The transferability of this study findings can be considered at other nurses in Indonesia or another country.

Results

The result showed that the majority (5) of nurse managers were in the age range of 40-44 years, with 11 being married, and only one had a master's degree in nursing. Moreover, a significant proportion (12) were females, and six had worked for a duration of 1-10 years. The demographic characteristics are presented in Table 1. The result showed that five major themes included: i) anxiety response, ii) risk factor, iii) protective factor, iv) interventions, and v) anticipated support from nurses. The themes and categories are presented in Table 2 below.

Anxiety response

This theme showed the various dimensions of anxiety responses among nurses including cognitive, physiological, behavioral, social, and affective. Several informants explained that the cognitive response they experienced was fear of being infected and infecting other people. The physiological response experienced by several informants was fatigue. The social response experienced by several informants was feeling isolated from family and other people. The behavioral response experienced by several informants was to carry out preventive activities repeatedly to prevent infection. Meanwhile, the affective response experienced was that several informants felt sad and cried seeing the condition of the COVID-19 pandemic which did not know when it would end. The various responses of nurse managers include: “... *afraid of getting infected and transmitting it to others ...*”. “*Tired, surely there is fatigue ...*”, “*At that time, when we returned home, I took a shower first. At my house, it feels unfamiliar, there is a different bed for the children and my husband ...*”, “*So, we are on our own, isolating ourselves...*”, “*Sometimes I*

cry alone, wondering when this will pass, like, it's okay, just cry ... ”.

Risk factor

This theme showed evidence that the risk factors of nurses were biological, psychological, and social-cultural. The biological risk factor experienced was the informant's exposure to cases of infection. The risk factor experienced by several informants was a lack of knowledge regarding COVID-19. The sociocultural risk factors experienced by several informants were feeling shunned by other people. The responses from nurse managers were as follows: “... *fear of transmitting it...*”, “*Lack of knowledge about the disease ...*”, “*Avoid people ...*”.

Protective factor

This theme showed evidence that the protective factors of nurses included biological, psychological, and social-cultural. The biological protective factor possessed by several informants is young age. The psychological factor is the experience of the informant and the socio-cultural factor is the informant's single status (not yet married). The various responses from nurse managers include: “... *The age of 21-30 is still considered young ...*”, “*Having experience in the field for at least 1 year ...*”, “*Everyone is still young women, single...*”.

Overcoming anxiety

This theme showed strategies used to overcome anxiety among nurses including cognitive, spiritual, ego-focused, and problem-focused coping. Several informants explained that cognitive coping was done by thinking positively about the current situation and conditions they were experiencing. Several informants explained that spiritual coping was also done by getting closer to God and carrying out religious activities such as praying. Some informants used ego-focused coping by trying to enjoy and think about happiness. Some informants also carried out problem-focused coping by breathing relaxation. The responses from nurse managers were as follows: “... *positive thinking ...*”, “*closer to God, prayer ...*”, “...*relaxation...*”, “...*Just bring happiness, enjoy...*”.

Expected support

This theme showed the expected support of nurses from family, peer, and institutional. Several informants hoped for support from the family in the form of motivation and encouragement. Several informants hoped for support from friends such as helping at work, reminding each other, collaborating with each other and coordinating in caring for COVID-19 clients. Several informants also hoped for support from the hospital in the form of increasing knowledge and information through training. The responses received from nurse managers were as follows: “... *give encouragement and motivation...*”, “...*Mutual reminders, cooperation, and coordination, mutually reinforcing...*”, “...*given training, sharing information...*”

Discussion

Theme 1. Anxiety response

The results showed that the theme on signs and symptoms of anxiety experienced by nurses regarding COVID-19 consisted of five sub-themes, namely physiological, behavioral, cognitive, affective, and social. Signs and symptoms of anxiety are associated with the response of the body to stressors that can be observed directly or indirectly through physiological, behavioral, cognitive, affective, and social changes.¹¹

The physiological responses shown in this study were fatigue, difficulty sleeping, breathing, and urinating, as well as headaches. The results were consistent with physiological responses such as respiratory changes, neuromuscular changes, and urinary tract changes.¹¹

The behavioral response is crucial to avoid transmission from the source, as nurses fear both contracting and transmitting the infection to others. Extra preventive measures include double-masking, spraying money with disinfectant, repeatedly washing hands with hand sanitizer, and repeated bathing, with some participants reporting migraines due to frequent bathing.

The cognitive response experienced by nurses included negative thoughts such as feeling that the virus was still present in the hair or on fruit even after bathing and

washing, fear of death, fear of being blamed, feelings of fear/worry/anxiety of contracting or transmitting the infection to others, and confusion about what to do when caring for COVID-19 patients. A similar study reported that cognitive responses to anxiety included concentration/evaluation/attention, fear and decreased productivity, attention disturbances, poor concentration, forgetfulness, judgment errors, preoccupation, thought blocking, decreased perception field, confusion, and embarrassment.¹¹

Affective responses experienced by nurses included sadness, crying, and mood changes such as feeling irritated and emotionally affected when caring for COVID-19 patients. This aspect reportedly consisted of impatience, nervousness, tension, unease, dread, frustration, helplessness, worry, terror, anxiety, restlessness, numbness, guilt, and shame.¹¹ Sadness, frequent crying, and mood changes are caused by pity when nurses witness the condition of patients, imagining the consequences for themselves or close family members, as well as feeling helpless in the COVID-19 pandemic situation.

The social response was demonstrated by individuals limiting social interactions with others. This was consistent with the results of previous studies stating that the social response experienced by COVID-19 nurses included self-limitation of social interaction and avoidance of the surrounding environment.¹¹ Nurses isolate themselves or limit interaction due to the fear of transmitting the infection to others and avoid contact with hospitals or sources of infection.

Theme 2. Risk factor

The theme of anxiety risk factors consists of biological, physiological, and social-cultural aspects, with stressors arising from internal and external components.^{12,13} Biological factors contributing to anxiety in nurses stem from direct contact with a source of infection. This is consistent with the theory that the biological cause of anxiety in nurses is the exposure to toxins/viruses/bacteria due to an increase in infection cases.¹¹ The surge in infection cases, coupled with injuries, and traumatic experiences becomes a significant source of.³⁻⁵ Nurses are a vulnerable group and COVID-19 is a highly infectious stressor.^{1,14-16} Approximately 3.8% of healthcare

workers worldwide were confirmed with COVID-19 worldwide while data from the International Council of Nurses reported an average of 6-10%, with the infection rate reaching up to 30% of all cases. Nurses worry about contracting COVID-19 and becoming carriers who could spread the disease to family.¹⁷⁻¹⁹

Psychological factors causing nurse anxiety include lack of knowledge, traumatic experiences, and lack of experience, as COVID-19 is a newly occurring disease.^{17,20}

According to a previous study, factors causing nurse stress during the pandemic include the novelty of COVID-19 and insufficient information.²¹

Causes of socio-cultural stress include lack of family support, isolation/stigma/discrimination. The COVID-19 pandemic limits the social interactions of nurses with families and the community. Nurses also become victims of discrimination from society (public stigma) and experience self-stigma. Public stigma includes actions in which nurses and the families are labeled as dangerous and potential transmitters of COVID-19.^{22,23} A previous study reported that nurses in Japan experienced discrimination.¹⁸ The feeling of not being able to work, isolation from society, unable to join places of worship, inability to participate in activities with friends and family, as well as discrimination from society are socio-cultural stressors for nurses.²⁴ Sociocultural stressors also occur due to a lack of social support.^{17, 25, 26}

Themes 3. Protective factor

Protective factors play a crucial role in helping nurses overcome anxiety, consisting of three sub-themes, namely biological, physiological, and social-cultural. These factors are determinants of resilience development that come from oneself, family, and the environment. According to theory, protective factors include a healthy diet and physical exercise/activities, support, emotional regulation, coping and problem-solving abilities, optimistic feelings, positive self-esteem, social competence, building relationships with others, participating in communities and society, financial support, access to support services.²⁷

The results showed that young age was a protective factor associated with good health conditions and the absence of comorbidities. As stated by a previous study, the age

group of 14–24 years is a protective factor.²³ Another study mentioned that older individuals tend to have financial stability in psychological and emotional aspects. According to a survey conducted in the UK, early adulthood, low income, and living alone pose a higher risk of mental health disorders during the COVID-19 pandemic. Younger people have more access to information about COVID-19 through social media, leading to increased stress. Anxiety occurs at a young age (20-35 years), specifically in nurses who work on the front line. These individuals are more susceptible to contacting sources of infection and have less experience in caring for clients.²⁸

Psychological protective factors include work experience, knowledge, positive feelings, and positive experiences in nursing due to the recovery of many clients, motivation, and positive thoughts.²⁸ Motivation is a coping source for nurses in facing stressors.¹¹ The experience of providing services for more than 20 years, becomes a protective factor along with the knowledge gained through training related to COVID-19 information and self-protection.^{28,29} Nurses who have the knowledge and skills to care for COVID-19 are protected from anxiety.

Socio-cultural protective factors are nurses who are not yet married and live alone. Previous studies stated that being married posed a risk of causing psychological problems in nurses. Living with a partner, marital status, and living with children are risk factors for anxiety.¹⁷

Themes 4. Overcoming anxiety

Coping strategies are protective factors in preventing anxiety, specifically problem-focused coping, while negative strategies cause anxiety.²⁵ Positive coping mechanisms, including storytelling with friends, distracting behaviors, and positive thinking, are recognized as protective factors.²⁵ Coping strategies are cognitive and behavioral efforts that individuals must make to manage internal and external stressors. These strategies are shaped by personal attributes, situational factors, and available resources, aiming to restore balance to face reactions triggered by stressors. Commonly used adaptive coping includes relaxation exercises, meditation, physical activity, or modifying cognitive processes.

The results showed that nurses dealt with stressors by spending significant time outdoors and engaging in deeper spiritual activities toward God, themselves, and others. Praying and reading holy books are effective strategies for reducing stress and anxiety during the COVID-19 pandemic.³⁰ Prayer provides inner strength and enables individuals to manage stress more effectively, practically, and safely. Spiritual beliefs are useful as a source of hope and can support coping efforts in unexpected situations.¹¹

The ability of nurses to overcome stressors, as well as resilience, and social support are related to psychology.³⁰ A previous study stated that nurses with spirituality, hope, and optimism experienced lower anxiety. There is a positive relationship between religious coping mechanisms and reduced symptoms of anxiety, aggressive behavior, psychological distress, and depression. Spirituality, peace, and faith are protective factors that prevent anxiety. Other studies showed that healthcare workers used problem-focused and emotion-focused coping to manage stress during the COVID-19 pandemic.³⁰

Themes 5. Expected support

Psychological resilience, similar to social support, is a protective factor in dealing with stressors and traumatic events.³⁰ Resilient healthcare workers can recover and endure psychological burdens. Psychological resilience plays a significant role in protecting individuals from mental health consequences in emergencies or disasters.³⁰

The support expected by nurses includes scheduling arrangements and human resources in nursing services. The results showed that well-rested nurses had lower levels of anxiety and stress. Overwork can cause a sense of control loss, feelings of helplessness, as well as insomnia, headaches, loss of appetite, and other physical disorders. Hospitals must ensure adequate nursing staffing, organize rotations and ensure adequate rest for nurses.¹⁷ Furthermore, adequate resources, increased welfare, incentives, counseling, support from the environment, and management during the COVID-19 pandemic are expected support of nurses.¹⁹

Labrague *et al.* also states that social support is needed by nurses,³⁰ specifically from the family, nurse managers, and people in the environment. Social support, daily and

structured life routines, as well as well-established family relationships can enhance psychological well-being. The different forms of support include emotional, social, and relational.²⁵ Recognition and acknowledgment of efforts, infection control guidelines, and the provision of facility amenities during the pandemic are forms of support needed by nurses from hospitals.

The limitation of study is that researchers could not directly observe the anxiety experienced by nurses because the research was conducted after the COVID-19 pandemic.

In conclusion, this study examined responses, risk factors, protective factors, interventions, and the support expected by nurses in managing anxiety. Research shows that nurses need intervention in dealing with signs and symptoms of anxiety, reducing existing risk factors and increasing protective factors within themselves in order to produce adaptive coping and resilience in facing every challenge that exists in the work environment. The research results show that nurses are subjects who are vulnerable to anxiety. The use of adaptive coping can be one of the factors that can reduce negative responses to biological, psychological, socio-cultural and environmental stressors faced by nurses in health care settings. The use of adaptive coping can be developed and applied in hospitals and nurses need social support to strengthen it and achieve resilience in facing stressors that will continue to exist in the nurse's work environment.

The results underscored the presence of signs and symptoms, as well as risk and protective factors that could prevent anxiety. This study showed that nurses needed interventions to address the signs and symptoms of anxiety, reduce existing risk factors, and enhance protective factors in themselves to develop adaptive coping and resilience in facing challenges in the work environment.

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Table 1. Nurse manager demographic characteristics

Variable	Frequency (<i>f</i>)
Age	
30–34	1
35–39	2
40–44	5
45–49	3
50–54	2
Marital status	

Married	11
Separated	2
Educational level	
Ners	12
Master of Nursing	1
Sex	
Female	12
Male	1
Work Duration (years)	
1-10	6
11-20	5
21-30	2

Table 2. Themes and categories that emerged

Themes	Categories
Anxiety Response	Cognitive Response Physiological Response Behavior Response Social Response Affective Response
Risk Factor	Biological Factor Psychological Factor Socialcultural Factor
Protective Factor	Biological Factor Psychological Factor

	Socialcultural Factor
Interventions conducted to address anxiety	Cognitive coping Spiritual Coping Ego-focused coping Problem-focused coping
Expected Support	Family Peer Institusional