

COVID-19 pandemic and death anxiety among intensive care nurses working at the Hospitals Affiliated to Tehran University of Medical Science

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ABSTRACT

Introduction: The unpredictable challenges and conditions of COVID-19 can cause mental health problems. In such a situation, one of the most important psychological problems is the fear and anxiety of death. Death anxiety can affect the quality of patient care services and the job satisfaction and mental health of nurses. **Methods:** This is a descriptive cross-sectional study in which 110 nurses working in the intensive care units of hospitals affiliated to the Tehran University of Medical Sciences were selected by the convenience sampling method from April to September 2016. The data collection tools used in the study include a demographic questionnaire and a Templer death-anxiety questionnaire. **Findings:** The results showed that the level of death anxiety in nurses working at COVID-19 intensive care units is associated with age, working hours per week, childbearing, several patients needing end-of-life care, cases of direct participation in resuscitation operations, cases of patient death observations, and satisfaction with personal protective equipment ($P < 0.05$). **Conclusion:** Increasing the nurses' awareness of the critical situations of COVID-19, management measures, improving the working environment, social support, and increasing personal protective equipment seem to be the effective factors in protecting the intensive care unit nurses against COVID-19 and reducing death anxiety.

Keywords: COVID-19, mental health, personal protective equipment, severe acute respiratory syndrome coronavirus

Introduction

The health and life of humans have been threatened by various infectious diseases at different times,^[1,2] leading the researchers to study and control their effects. The most recent case was reported in December 2019 in Wuhan, China. This infectious disease

originated from a new and genetically modified virus of the coronavirus family called COV-SARS-2, which was later named COVID-19 disease.^[3,4] The World Health Organization (WHO) declared SARS-CoV-2 as a global pandemic on March 11, 2020.

COVID-19 epidemic is the main health and economic catastrophe of the current time. Since its inception in Asia, the virus has spread to all regions and caused many casualties.^[5] Despite relentless efforts to identify infected people and to establish effective treatment protocols, the mortality rate from

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the disease has reached 10% in some countries.^[5,6] Unfortunately, about 20% of the infected individuals are health workers.^[7]

The unpredictable challenges and conditions of COVID-19 and its growing number of cases can lead to mental health problems. In such a situation, one of the most important psychological problems is the fear and anxiety of death. Death anxiety is a normal reaction by humans when faced with death or a chronic or life-threatening illness.^[8] Previous research on the prevalence of COVID-19 has shown a significant association between the stressful conditions caused by the disease and common mental disorders, especially death anxiety.^[1,9,10] Death is a natural phenomenon that even thinking about can cause anxiety. Death anxiety can affect the quality of patient care services as well as the job satisfaction and mental health of nurses.^[9] Fear and anxiety caused by the possible disease can impose a high and destructive psychological burden, leading to mental disorders, weakening the immune system, and reducing the body's ability to fight disease in people, including nurses working in the intensive care units.^[11] Health-care providers play an important role in treating people with coronavirus infection. Thus, it is essential to maintain their status and mental health for the continuous provision of efficient medical services. Understanding the concerns of physicians, nurses, and treatment staff help to provide personal support and care for the infected people.^[10]

As the key element of care, nurses constitute more than 75% of the treatment staff and are at the frontline against the COVID-19 pandemic. The work environment of nurses results in long-lasting stress.^[12]

The National Institute for Occupational Safety and Health (NIOSH) has ranked nursing as the 12th most stressful professions, and the first among the health professions.^[13] Meanwhile, factors such as the nature of work, heavy protective clothing, the use of masks, the risk of self-contamination, and contaminating others can lead to psychological disorders in nurses working in COVID 19-related wards, including intensive care units.^[14]

The increasing prevalence of COVID-19 has led to a large number of research on its negative impact on communities. However, most of the research is related to the clinical profile of infected patients and the genomic characteristics of the virus. This study aimed to determine death anxiety in nurses working in intensive care units related to COVID-19.

Materials and Methods

This is a descriptive cross-sectional study in which 110 nurses working in the intensive care units of hospitals affiliated to the Tehran University of Medical Sciences were selected by a convenience sampling method from April to September 2016. The inclusion criteria of this study included having an associate's degree or higher in nursing, working in an intensive care unit with at least one year of work experience, having no refractory illness in himself or first-degree relatives, and not having a mental

illness. To select the research samples, the researcher referred to the intensive care unit several times. Each time, while observing the self-protection criteria, the researcher visited the nurses and explained the purpose of the study. A written informed consent was obtained after the nurses agreed to participate in the study. Then, the contents of the questionnaire and how to complete it were explained to the participants and the confidentiality of their information was assured through coding the questionnaire. Considering the appropriate clinical conditions in the ward, sufficient time was allocated to complete the questionnaire. The data collection tool included a two-part questionnaire that was completed as a self-report. The demographic information questionnaire included age, gender, marital status, number of children, specific disease history, shift work, number of patients cared for per shift, satisfaction with personal protective equipment, study rate to increase knowledge about the disease, number of end-of-life care patients, number of direct participants in resuscitation operations, and the number of deaths observed in the last six months. Besides, a Templer questionnaire was used to measure the level of death anxiety. The questionnaire included 15 yes/no questions, in nine of which one point was considered for choosing the correct answer and in six questions, one point for choosing the wrong answer. The total score of the questionnaire varies between 1 and 15 and higher scores indicate more death anxiety. According to the obtained scores, death anxiety was classified into three levels of mild anxiety (0–6), moderate anxiety (7–9), and severe anxiety (10–15). Templer has reported the reliability of the overall scale to be 0.83.^[15] Moradipour *et al.*^[16] reported a coefficient of 0.78 for the test–retest reliability of the scale. Data were analyzed using the SPSS19 statistical software.

Results

A total of 110 nurses working in the intensive care unit were studied, of whom 43 were single and 67 were married, 42 had children and 68 had none. The age of nurses ranged from 22 to 50 with a mean age of 31.47 ± 2.1 years. 63 participants had work experience between 1 and 10 years and 37 had more than 10 years. Mild and severe anxiety levels were identified in 34 (30.9%) and 76 (69.1%) nurses, respectively. Based on the variables studied in nurses working in the intensive care unit, the mean and standard deviation of death anxiety are expressed in Table 1. The results showed that there was no statistically significant association between the mean score of death anxiety and any demographic variables studied in this study ($p > 0.05$). The results also showed that the level of death anxiety among the nurses working at COVID-19 intensive care units is associated with age, working hours per week, childbearing, some patients needing end-of-life care, cases of direct participation in resuscitation operations, cases of patient death observations, and satisfaction with personal protective equipment ($p < 0.05$).

Discussion

The present study aimed to investigate the relationship between the COVID-19 pandemic and death anxiety in nurses working in the intensive care units of hospitals affiliated to Tehran University

Table 1: Mean and standard deviation of death anxiety based on the studied variables in nurses working in the intensive care unit

Variable	Death anxiety	
	Mean±standard	P
Age		
22-35 (65 people)	7.9±2.6	P<0.05
35-50 (45 people)	9.8±3.1	
Marital status		
Single (43 people)	7.8±4.8	
Married (67 people)	7.4±3.2	
Having children		
Yes (42 people)	11.1±5.7	P<0.05
No (68 people)	8.7±4.6	
Work experience in ICU		
1 to 10 years (63 people)	9.9±4.1	
More than 10 years (37 people)	9.7±4.3	
Average working hours per week		
<36 h	8.7±3.1	P<0.05
>72 h	12.9±1.8	
Satisfaction with personal protective equipment		
Moderate	10.1±4.9	P<0.05
Weak	11.7±3.8	
End-of-life care		
-	9.2±3.1	P<0.05
Direct participation in resuscitation operations		
-	10.7±5.1	P<0.05
Observing the death of patients		
-	11.2±5.8	P<0.05

of Medical Sciences. According to the findings of this study, nurses in the intensive care units experience death anxiety when faced with the COVID-19. The prevalence of COVID-19 has produced a critical condition in society, and media reports on the morbidity and death of the disease result in psychological reactions, especially fear and anxiety of death.^[1,17] Death is a natural phenomenon that can cause anxiety for anyone. Death anxiety is caused by thoughts of one's death or others, and its negative impacts have been shown in various areas in people's lives such as pessimism, despair, poor understanding of social support, and insufficient life perception.^[10] Such stressful conditions cause the person to be unable to process properly and experience severe anxiety.

As the key element of care in the treatment team, nurses are at the frontline against the COVID-19 pandemic and experience long-term continuous stress that may threaten their health, especially those working in COVID 19-related wards including intensive care units, and lead to psychological disorders.^[14]

The results of the present study showed that the level of death anxiety in nurses working at COVID-19 intensive care unit is associated with several factors including age, working hours per week, having children, some patients needing end-of-life care, cases of direct participation in

resuscitation operations, cases of patient death observations, and satisfaction with personal protective equipment and this association is gender-independent. Following the first report of COVID-19 infection on March 11, 2020, despite relentless efforts to identify infected individuals and establish effective treatment protocols, the sudden outbreak of the disease led to catastrophic consequences and imposed a heavy burden on social order, economic activity, and health systems worldwide. While trying to fulfill their professional responsibilities, health care providers are also trying to prevent themselves from becoming infected with the virus. Due to the admission of patients with critical conditions in the intensive care units, the nurses working in these wards usually experience high levels of fatigue, stress, and anxiety. Previous studies (before the outbreak of COVID-19)^[18-20] and novel studies (after the outbreak of COVID-19)^[12,21,22] have referred to some predictors of mental disorders including hard working conditions, prolonged shift works, insufficient rest, job dissatisfaction, marital status, and financial problems.

Chen *et al.* conducted a study on mental health care for medical staff in China and reported that most of the nurses working at the Corona Central Hospital who had irritable and distressing symptoms expressed fear of spreading the virus to their families and a lack of protective equipment. Besides, the nurses felt the inability to deal with critically ill patients and those who were unwilling to be quarantined in the hospital.^[23] Sarbooji *et al.* reported a moderate level of depression, anxiety, and stress in nurses working in COVID 19-related wards at 9 Dey Hospital Torbat-e Heydarieh and found that the level is significantly associated with age, employment status, and satisfaction with personal equipment.^[12]

The results of this study showed that the level of death anxiety in nurses working at the COVID-19 intensive care units was associated with age, working hours per week, childbearing, number of patients needing end-of-life care, cases of direct participation in resuscitation operations, cases of patient death observations, and satisfaction with personal protective equipment ($p < 0.05$).

Conclusion

Nurses are regarded as the main element of care in the treatment team and are on the frontline in dealing with the COVID-19 pandemic. However, working in such an environment causes prolonged continuous stress among nurses. In this regard, increasing the nurses' knowledge of the critical situations of COVID-19, management measures, improving the working environment, social support, and increasing the personal protective equipment seem to be the effective factors in preventing death anxiety among intensive care unit nurses.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent

for their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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