Professional Quality of Life and Mental Health Outcomes of Emergency Nurses in Egypt During the COVID-19 Pandemic

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Abstract

The coronavirus disease (COVID-19) epidemic resulted in both physical and mental health problems. Aim: To determine the emergency nurses' professional quality of life and mental health outcomes during the COVID-19 epidemic. **Method***:* The present study utilized a descriptive cross-sectional research design. The subjects consisted of 171 emergency nurses who were selected according to inclusion and exclusion criteria. The study was carried out in Egypt's emergency departments affiliated with Mansoura University Hospitals (Mansoura Emergency Hospital, Gastrointestinal Surgery Center, and Oncology Center). Tools of data collection included the demographic interview sheet, the professional quality of life scale version 5, the general anxiety disorder 7, and the patient health questionnaire. **Results**: There is a significant relationship between professional quality of life, anxiety, and depression among the studied nurses. **Conclusion**: There is a moderate level of compassion fatigue, burnout, anxiety, and depression among nurses.

Introduction

The coronavirus disease (COVID-19) pandemic began in Wuhan, China, in late December 2019, and quickly spread throughout the region, attracting worldwide attention (Zhu et al., 2020). The COVID-19 outbreak put a lot of burden on healthcare systems, especially among healthcare professionals. Even though the outbreak is substantially controllable, the incidence rate, both of suspected and proven cases, continues to rise (Armocida, Formenti, and Ussai 2020; Xie, Tong, and Guan 2020).

Nurses are a vital power in the struggle against the pandemic, and they are the most stressed of all healthcare staff (Maunder, 2004; Nickell et al., 2004). Because of the COVID-19 epidemic, nurses are experiencing stress, worry, persistent emotional suffering, exhaustion, and loneliness. This constant stress and trauma have a tremendous impact on nurses' mental health, sense of safety, and ability to provide the best possible care (Hendy, Abozeid, Sallam, Abdel Fattah, and Reshia, 2021).

In a previous study, Maben and Bridges (2020) found that during the COVID-19 crisis, nurses gave up their desires to engage successfully in a high-stress job and made unselfish contributions out of ethical and professional obligation. In the context of

serious health hazards, they experience loneliness and defenselessness. Furthermore, the stress caused by greater responsibilities brought on by public health emergencies also (Aliakbari, Hammad, Bahrami, and Aein 2015).

Several factors have been found to influence nurses' mental health and their quality of Life throughout a coronavirus pandemic, including the deficiency of adequate healthcare systems, a shortage of personal protective supplies and education, contact with proven patients, worry about infection, the concern of transmitting the disease among their relatives, worries regarding their kids getting neglected, long working hours, and heavy workloads (Daly, Jackson, Anders, and Davidson 2020; Lu, Wang, Lin, and Li 2020).

Nonetheless, in the fight against COVID-19, psychological distress among nurses was progressive; panic and anxiety began early and faded, but depression, psychological symptoms, and post-traumatic stress symptoms developed and persisted for a long time, having a significant impact (Rodolfo et al., 2020).

Professional quality of life (ProQOL) is a tool for evaluating how healthcare teams feel about their work. It includes compassion satisfaction (CS), burnout (BO), and secondary traumatic stress (STS) (Stamm, 2005). Nurses

typically experience greater burnout and secondary traumatic stress because of prolonged exposure to the care of suffering patients, but lower compassion satisfaction, which is generally regarded as the "cost of caring". Nurses' physical and emotional health might be impaired by low ProQOL, as well as their compassion in clinical practice (Sinclair, Raffin- Bouchal, Venturato, Mijovic-Kondejewski, and Smith- MacDonald, 2017).

The significance of the study:

During the COVID-19 epidemic, frontline professionals, like nurses, reported anxiety and depression symptoms frequently, especially those who had close contact with infected patients. This can result in low employee morale, absenteeism, indifference, and poor work performance, all of which can contribute to patient discontent (An et al., 2020). Although estimates of depression and anxiety prevalence among emergency nurses working in various departments are significant numbers for health authorities to design prevention policies and effective treatment methods to reduce the harmful effects of depression and anxiety. As a result, it is critical to look at the impact of COVID-19-related working stress on the mental health and professional quality of life of emergency nurses.

Aim of the study

The study aims to determine the emergency nurses' professional quality of life and mental health outcomes during the COVID-19 pandemic.

Research question:

1- What is the effect of the Covid-19 on the professional quality of life and the mental health of the emergency nurses?

2- What is the relationship between the quality of life and the mental health among emergency nurses working during the Covid-19?

Methods:

Research Design: The present study employed a descriptive cross-sectional research design.

Setting: The research was carried out at the emergency departments affiliated with Mansoura University Hospitals (Mansoura Emergency Hospital, Gastrointestinal Surgery Center, and Oncology Center), Egypt. Those emergency departments are well equipped with advanced technology and manpower required for patients' management, such as mechanical ventilators, bedside monitors, infusion pumps, suction machines, and portable x-ray machines. Those units provide care for different emergencies and critical conditions. The nurse-patient ratio in this ICU is nearly 1:2.

Subjects: A convenience sample of 171 nurses from the previously mentioned settings was recruited. The following eligibility criteria were used to choose the participants for this study: both sexes, all age groups, nurses who have close contact with patients, no medical or psychological illnesses, and those who agreed to participate in the study.

Tools of the study:

For data collection, the four following tools have been utilized:

1- **Demographic interview sheet:** the researchers developed this tool after reviewing relevant literature, such as age, sex, level of education, marital status, residence, occupation, years of experience, income, duty shift, and training for COVID-19 attendance.

2- **Professional Quality of Life Scale version 5 (ProQual-5)**.

The ProQual-5 was developed by Stamm (2005) and is designed to evaluate both the positive and negative outcomes of dealing with people who have encountered extremely stressful experiences. The ProQOL-5 is a 30-item scale with three subscales to assess compassion satisfaction, burnout, and the trauma/compassion fatigue scale. Each subscale has 10 points, with a 5-point Likert scale. Participants were expected to evaluate how often they had encountered each element (1 = never to 5 = very often). Scores of 22 or less are considered low, scores of 23 to 41 are considered average, and scores of 42 or more are considered high. The scale has acceptable internal consistency (a Chronbach's alpha of 0.93).

3- The General Anxiety Disorder-7 (GAD-7)

Spitzer, Kroenke, Williams, and Löwe (2006) developed the GAD-7, which is a self-reported screening tool for determining the severity of generalized anxiety disorders. GAD-7 has seven items. Each item asks the participant to rank his/her symptoms during the previous two weeks. Participants' responses can be graded on a scale of not at all (0), a few days (1), more than half of the days (2), and virtually every day (3). Minimal or no anxiety is reflected by a rating of 0–4, mild anxiety by a rating of 5–9, moderate anxiety by a rating of 10–14, and severe anxiety by a rating of 15 or higher. Internal consistency of the scale is acceptable (Chronbach's alpha of 0.89-0.92).

4-The Patient Health Questionnaire (PHQ-9):

The PHQ-9 Scale was designed by Löwe, Unutzer, Callahan, Perkins, and Kroenke (2004). This scale is a quick self-reported assessment method that is often utilized in primary care. It is based on the Diagnostic and Statistical Manual Fourth Edition's (DSM-IV) diagnostic criteria for major depressive disorders. The tool is used to evaluate a patient's mood during the previous two weeks before the consultation. Two of the PHQ-9's items refer to somatic symptoms—fatigue and sleep disturbance and the other items refer to non-somatic symptoms. Items are graded on a four-point scale, ranging from 0 (not at all) to 3 (almost every day). Scores of the PHQ-9 have been used in the following manner: A score of 5-9 indicates mild depression, 10-14 indicates moderate depression, 15-19 indicates moderately severe depression, and 20 indicates severe depression. Internal consistency of the scale is acceptable (Chronbach's alpha of 0.86 and 0.88).

Fieldwork:

Permission to conduct the study was obtained from the directors and the head nurses of the Mansoura hospitals (Mansoura Emergency Hospital, Gastrointestinal Surgery Center, and Oncology Center), Egypt, after being informed about the purpose of the study and the time of data collection. The study tools (2, 3 & 4) were translated into the Arabic language by the researchers, and they were tested for content validity by a jury of 6 experts in the psychiatric and mental health nursing and critical care nursing fields and found to be valid. The tools were tested for their reliability using the test-retest method. Pearson coefficient correlation coefficients r = (0.85, 0.82, and 0.89, respectively).

A pilot study was conducted on 10% of the subjects to ascertain the clarity and applicability of the study tools and to identify the time required for completing the instruments. Those subjects were excluded from the study sample. The researchers interviewed each study subject to collect the necessary data using all the study tools. The researchers started the interview by introducing themselves to the study participants and giving them a brief idea of the aim of the study. The time taken for each interview ranged from 30 to 45 minutes, depending on the nurses' attention and willingness to cooperate or talk with the researchers. Data collection covered four months from January 2021 to the end of April 2021.

Ethical Considerations

Ethical approval was obtained from Mansoura University, Faculty of Nursing Research Ethics Committee. Informed consent was obtained from the study participants after explaining the purpose of the study. The participants were informed that their participation was voluntary and that they could withdraw from the study at any time. The collected data were kept confidential and anonymous.

Statistical analysis

SPSS software version 26 was used to organize, tabulate, and statistically analyze the data collected. The normality assumption was rejected. Frequency and percentage were used to describe different variables. Continuous variables were represented as medians and interquartile ranges. Mann-Whitney U test was used to test the difference between two means of continuous variables. The Kruskal-Wallis H test was used to test the difference between more than two means of continuous variables. A Spearman correlation coefficient test was conducted to test the association between two continuous variables. An investigation of

hierarchical regression was carried out to explore the independent variables of anxiety and depression. A p-value of 0.01 or 0.05 was considered statistically significant.

Result

Table 1 shows that more than one-third (39.2%) of the studied nurses were 20–30 years old. Females were more prevalent than males in the studied participants (63.2%). In addition, more than two-thirds (70.2%) of them were married. The majority (84.8%) of nurses lived in rural areas. Regarding the educational level, slightly more than two-thirds (67.3%) of the participants had a diploma degree. Also, more than half (52.6%) of the nurses had the experience of more than 15 years.

In terms of a duty shift, 40.4% of the nurses in the study worked the morning shift, and slightly less than three-quarters (74.9%) of the nurses in the study had no prior training in managing COVID-19 patients. Most of the participants (83.6%) work in an emergency room.

Table 2 represents that slightly more than half (50.9%) of the studied emergency nurses felt a moderate compassion satisfaction level, and more than two-thirds (68.4%) of the nurses had a low burnout level. Also, nearly two-thirds (64.3%) of them had a low trauma/compassion fatigue level.

Figure 1 shows that more than half (55.6%) of the studied emergency nurses had a minimal or no anxiety level.

Figure 2 shows that nearly half (43.3%) of the studied nurses had a minimal or no depression level.

Table 3 shows a statistically significant relationship between the studied emergency nurses' demographic characteristics (gender and marital status) and total trauma / compassion fatigue mean scores (P = 0.000**, 0.04*) respectively. Also, there is a highly statistically significant relationship between the studied emergency nurses' gender and total burnout mean score (P = 0.01**).

Table 4 shows a highly statistically significant relationship between the studied emergency nurses' occupational characteristics (attending a training about managing COVID-19 patients and workplace) and total compassion satisfaction mean scores (P = 0.01**, 0.002**) respectively. There is a statistically significant relationship between the studied emergency nurses' occupational characteristics (duty shift and workplace) and total burnout mean scores (P = 0.03*, 0.04*) respectively. Also, there is a highly statistically significant relationship between the studied emergency nurses' duty shift and total trauma/compassion fatigue mean scores (P = 0.002**).

Table 5 shows a statistically significant relationship between the studied emergency nurses' demographic characteristics (gender, marital status, and residence area) and total anxiety mean scores (P = 0.006**, 0.02*, 0.006**) respectively. Also, there is a statistically significant relationship between the studied emergency nurses' residence area and the total depression mean score (P = 0.02*).

Table 6 shows a highly statistically significant relationship between the studied emergency nurses' occupational characteristics (duty shift and attending a training about managing COVID-19 patients) and total anxiety mean scores (P = 0.01**, 0.04*) respectively. There is a statistically significant relationship between the studied emergency nurses' years of experience and total depression mean scores (P = 0.02*).

Table 7 shows a highly statistically significant relationship between the studied emergency nurses' professional quality of life subscales and anxiety as well as depression levels (P = 0.000**).

Table 8 shows a highly statistically significant contributing relation between the studied emergency nurses' anxiety with residence area and trauma /compassion fatigue factors (P = 0.03*, 0.001**) respectively.

Table 9 shows a highly statistically significant contributing relation between the studied emergency nurses' depression and compassion satisfaction, burnout, and anxiety factors (P = 0.02*, 0.001**, 0.000**) respectively.

Table (1): Studied Nurses' Demographic Characteristics (n = 171)

Variables	n	%
Age years		
▪ 20-30	**67**	**39.2**
▪ > 30-40	38	22.2
▪ > 40-50	62	36.3
▪ > 50	4	2.3
Gender		
▪ Male	63	36.8
▪ Female	**108**	**63.2**
Marital status		
▪ Single	47	27.5
▪ Married	**120**	**70.2**
▪ Widowed	4	2.3
Residence		
▪ Urban	26	15.2
▪ Rural	**145**	**84.8**
Level of education		
▪ Diploma degree	**115**	**67.3**
▪ Technical degree	30	17.5
▪ Bachelor's degree	26	15.2
Experience years		
▪ 1-5	10	5.8
▪ 6-10	56	32.7
▪ 11-15	15	8.8
▪ >15	**90**	**52.6**
Duty shift		
▪ Morning shift	**69**	**40.4**
▪ Morning and evening shift	66	38.6
▪ Nightshift	36	21.1
Attending training about managing COVID-19 patients		
▪ Yes	43	25.1
▪ No	**128**	**74.9**
Hospital		
▪ Emergency hospital	**143**	**83.6**
▪ GIT center	13	7.6
▪ Oncology center	15	8.8

Table (2): Studied Emergency Nurses' Professional Quality of Life Subscales Levels

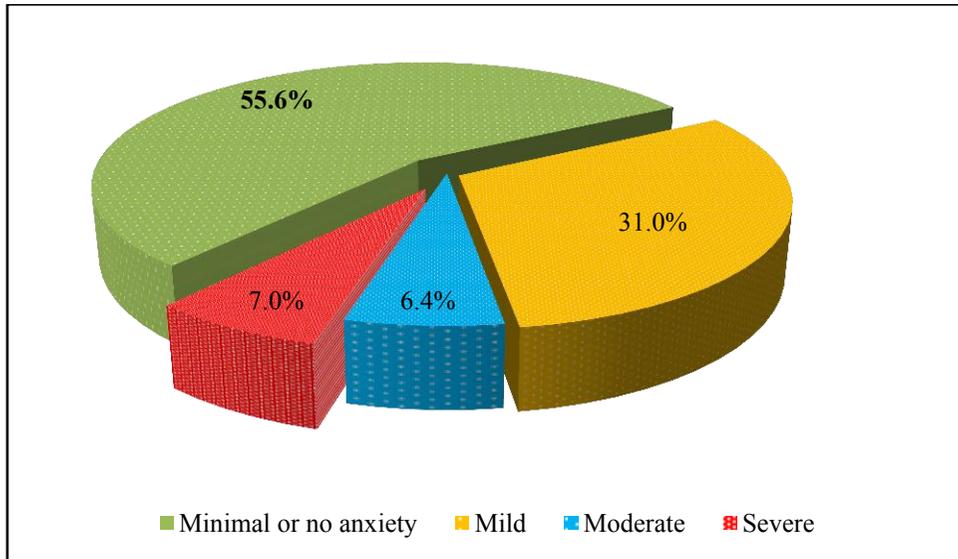| professional quality of life subscales	Low (0-22)		Average (23-41)		High (42-50)	
	n	%	n	%	n	%
A. Compassion satisfaction	4	2.3	**87**	**50.9**	80	46.8
B. Burnout	**117**	**68.4**	53	31.0	1	0.6
C. Trauma /Compassion fatigue	**110**	**64.3**	60	35.1	1	0.6

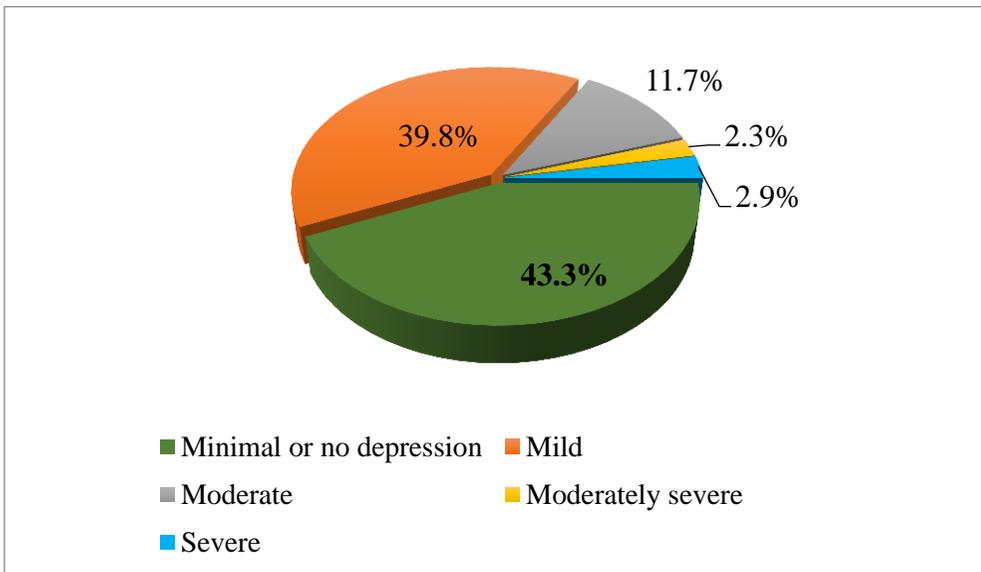**Figure (1):** Studied Emergency Nurses' anxiety Levels

Figure (2): Studied Emergency Nurses' Depression Levels

Table (3): Mean Scores of Professional Quality of Life Subscales in Relation to Studied Emergency Nurses' Demographic Characteristics (n = 171)

Demographic characteristics Variables	Total compassion satisfaction score	Total burnout score	Total fatigue score
	Median (IQR)	Median (IQR)	Median (IQR)
Age years			
▪ 20-30	41.0 (6.25)	16.0 (11.0)	18.0 (9.0)
▪ > 30-40	41.0 (6.25)	19.0 (12.0)	22.0 (16.25)
▪ > 40-50	42.0 (6.0)	18.0 (14.0)	18.5 (15.25)
▪ > 50	41.0 (3.0)	22.50 (10.0)	28.50 (12.75
KW value / p-value	0.32/0.95	2.25/0.52	3.63/0.30
Gender			
▪ Male	41.0 (6.0)	15.0 (8.0)	16.0 (7.0)
▪ Female	41.0 (6.0)	18.0 (11.75)	22.0 (15.0)
Z value / p-value	0.26/0.79	**2.49/0.01****	**3.71/0.000****
Marital status			
▪ Single	42.0 (6.0)	15.0 (7.0)	18.0 (8.0)
▪ Married	41.0 (6.0)	18.0 (13.0)	20.0 (16.0)
▪ Widowed	41.50 (10.0)	24.0 (10.75)	27.0 (10.50)
KW value / p-value	0.34/0.84	4.14/0.12	**6.68/0.04***
Residence			
▪ Urban	41.0 (8.50)	26.50 (16.50)	25.0 (16.25)
▪ Rural	41.0 (6.0)	18.0 (10.0)	19.0 (12.0)
Z value / p-value	1.08/0.28	1.43/0.15	1.06/0.28
Level of education			
▪ Bachelor's degree	42.50 (8.25)	15.0 (5.25)	14.0 (12.0)
▪ Technical degree	41.0 (6.0)	18.0 (12.0)	20.0 (13.0)
▪ Diploma degree	41.0 (6.0)	21.0 (13.0)	21.0 (12.0)
KW value / p-value	1.07/0.58	3.36/0.18	2.80/0.24

* Statistically significant (p ≤ 0.05) / ** Highly statistically significant (p ≤ 0.01)

Table (4): Mean Scores of Professional Quality of Life Subscales in Relation to Studied Emergency Nurses' Occupational Characteristics (n = 171)

Occupational Characteristics	Total compassion satisfaction score	Total burnout score	Total fatigue score
	Median (IQR)	Median (IQR)	Median (IQR)
Experience years			
▪ 1-5	40.5 (8.75)	20.0 (16.75)	17.0 (14.75)
▪ 6-10	41.0 (6.75)	16.0 (7.75)	18.50 (9.0)
▪ 11-15	41.0 (4.0)	16.0 (11.0)	17.0 (12.0)
▪ >15	41.0 (6.0)	18.0 (13.0)	20.50 (16.0)
KW value / p-value	0.37/0.94	1.69/0.63	3.31/0.34
Duty shift			
▪ Morning shift	42.0 (5.50)	19.0 (11.0)	22.0 (14.50)
▪ Morning and evening shift	41.0 (7.25)	17.50 (13.0)	20.50 (15.25)
▪ Nightshift	41.0 (5.75)	15.0 (4.75)	14.0 (6.75)
KW value / p-value	3.54/0.17	**7.16/0.03***	**12.69/0.002****
Attending training about managing COVID-19 patients			
▪ Yes	42.0 (7.0)	17.0 (8.75)	19.50 (11.0)
▪ No	40.0 (5.0)	20.0 (14.0)	21.0 (18.0)
Z value / p-value	**2.48/ 0.01****	1.43/ 0.15	0.51/ 0.61
Hospital			
▪ Emergency hospital	41.0 (6.0)	16.0 (13.0)	19.0 (13.0)
▪ GIT center	44.0 (6.50)	20.0 (6.50)	22.0 (8.50)
▪ Oncology center	44.0 (5.0)	15.0 (7.0)	18.0 (8.0)
KW value / p-value	**12.53/0.002****	**6.48/0.04***	3.08/0.21

* Statistically significant (p ≤ 0.05) / ** Highly statistically significant (p ≤ 0.01)

Table (5): Mean Scores of Anxiety and Depression in Relation to the Studied Emergency Nurses' Demographic Characteristics (n = 171)

Demographic characteristics Variables	Total anxiety score	Total depression score
	Median (IQR)	Median (IQR)
Age years		
▪ 20-30	4.0 (5.0)	4.0 (5.0)
▪ > 30-40	5.0 (5.0)	6.0 (5.0)
▪ > 40-50	4.0 (5.25)	6.0 (6.0)
▪ > 50	7.50 (6.0)	7.0 (2.25)
KW value / p-value	5.49/0.13	3.20/0.36
Gender		
▪ Male	3.0 (6.0)	5.0 (5.0)
▪ Female	5.0 (5.0)	6.0 (5.0)
Z value / p-value	**2.77/0.006****	0.95/0.34
Marital status		
▪ Single	3.0 (5.0)	4.0 (5.0)
▪ Married	4.0 (5.75)	6.0 (5.0)
▪ Widowed	10.50 (11.25)	8.0 (2.25)
KW value / p-value	**7.58/0.02***	2.50/0.28
Residence		
▪ Urban	7.0 (6.0)	7.0 (5.25)
▪ Rural	4.0 (5.0)	5.0 (5.0)
Z value / p-value	**2.76/0.006****	**2.42/0.02***
Level of education		
▪ Diploma degree	5.0 (4.0)	6. 0 (5.0)
▪ Technical degree	3.0 (7.25)	5.50 (6.0)
▪ Bachelor degree	4.0 (6.0)	4.50 (5.0)
KW value / p-value	0.07/0.96	0.23/0.88

* Statistically significant (p ≤0.05) / ** Highly statistically significant (p ≤0.01)

Table (6): Mean Scores of Anxiety and Depression in Relation to the Studied Emergency Nurses' Occupational Characteristics (n = 171)

Occupational characteristics	Total anxiety score	Total depression score
	Median (IQR)	Median (IQR)
Experience years		
▪ 1-5	7.0 (6.25)	7.0 (5.75)
▪ 6-10	3.0 (5.0)	4.50 (5.75)
▪ 11-15	4.0 (1.0)	3.0 (2.0)
▪ >15	4.50 (6.0)	6.0 (4.0)
KW value / p-value	3.53/0.31	**9.67/0.02***
Duty shift		
▪ Morning shift	4.0 (6.0)	4.0 (4.0)
▪ Morning and evening shift	3. 0 (5.0)	5.50 (7.0)
▪ Nightshift	4.50 (5.25)	6.0 (5.0)
KW value / p-value	**9.02/0.01****	4.63/0.09
Attending training about managing COVID-19 patients		
▪ Yes	4.0 (5.0)	5.0 (5.0)
▪ No	5.0 (6.0)	6.0 (7.0)
Z value / p-value	**2.11/ 0.04***	1.09/0.27
Hospital		
▪ Emergency hospital	4.0 (4.0)	5.0 (6.0)
▪ GIT center	2.0 (5.50)	6.0 (5.50)
▪ Oncology center	4.0 (6.0)	6.0 (4.0)
KW value / p-value	1.28/0.52	0.68/0.71

* Statistically significant (p ≤0.05) / ** Highly statistically significant (p ≤0.01)

Table (7): Relationships Between Professional Quality of Life Subscales, Anxiety and Depression Among the Studied Emergency Nurses

Variables	Anxiety		Depression	
	r	p	r	P
1. Professional quality of life subscales A. Compassion satisfaction	-0.31	**0.000****	-0.22	**0.000****
B. Burnout	0.39	**0.000****	0.41	**0.000****
C. Trauma /Compassion fatigue	0.41	**0.000****	0.44	**0.000****
2. Depression	0.75	**0.000****		

* Statistically significant (p ≤0.05) / ** Highly statistically significant (p ≤0.01)

Table (8): Factors Contributing Anxiety Among the Studied Emergency Nurses

	Unstandardized Coefficients		Standardized Coefficients	t	P-value
	B	Std. Error	Beta		
Gender	0.65	0.69	0.06	0.94	0.34
Marital status	0.65	0.58	0.07	1.12	0.26
Residence	-1.83	0.84	-0.13	-2.17	**0.03***
Duty shift	0.29	0.44	0.04	0.65	0.51
Attending training	0.57	0.71	0.05	0.80	0.42
Compassion satisfaction	-0.08	0.06	-0.10	-1.33	0.18
Trauma /Compassion fatigue	0.19	0.06	0.32	3.27	**0.001****
Burnout	0.13	0.07	0.20	1.78	0.07

* Statistically significant (p ≤0.05) / ** Highly statistically significant (p ≤0.01)

Table (9): Factors Contributing Depression Among the Studied Emergency Nurses

	Unstandardized Coefficients		Standardized Coefficients	t	P-value
	B	Std. Error	Beta		
Residence	0.24	0.62	0.02	0.38	0.69
Experience	-0.05	0.20	-0.01	-0.27	0.78
Compassion satisfaction	0.09	0.04	0.13	2.19	**0.02***
Trauma /Compassion fatigue	-0.02	0.04	-0.05	-0.65	0.51
Burnout	0.18	0.05	0.29	3.29	**0.001****
Anxiety	0.63	0.05	0.67	11.17	**0.000****

* Statistically significant (p ≤0.05) / ** Highly statistically significant (p ≤0.01)

Discussion

The COVID-19 pandemic had a profound effect on the physical, social, and mental health of every individual worldwide, especially among frontline teams including nurses working in emergency care settings. The severity, fatality, and vulnerability to infection can generate or exaggerate fear and anxiety among nurses, Furthermore, during infectious outbreak crises, this may have an impact on their health and well-being, as well as their ability to function effectively (Ahorsu et al., 2020). So, the present study was conducted to determine the emergency nurses' professional quality of life and mental health outcome during the COVID-19 pandemic.

Professional quality of life (ProQOL) is defined as "the feeling one has about their work as a helper," and it is appropriate for those who are subjected to potentially stressful experiences as a result of paid or voluntary employment, such as medical aid team members (Dasan, Gohil, Cornelius, and Taylor 2015). In terms of overall professional quality of life, the current study found that most of the participants have average and high levels of compassion satisfaction (CS), as well as low and average levels of burnout (BO) and compassion fatigue (CF). One possible explanation for these results is that the data for this study was gathered during the third wave of the pandemic, providing participants with more information about the epidemic's trajectory as well as a sense of control and resilience to job stresses.

These findings are consistent with recent research by Cragun, April, and Thaxton (2016);

Hunsaker, Chen, Maughan, and Heaston (2015); and Wu et al. (2020), which found low-to-average levels of compassion fatigue and burnout. It also revealed that compassion satisfaction levels ranged from average to high. Workers caring for COVID-19 patients, on the other hand, experienced higher compassion fatigue and burnout than those working in other healthcare settings, according to Lai et al. (2020) in Asia.

The COVID-19 pandemic appears to have raised demand while reducing resources. As a result, medical professionals are susceptible to psychological stress as well as other mental health symptoms, including depression and anxiety (Xiang et al., 2020). In the present study, the total prevalence of anxiety and depression among the study subjects was low, which could be attributed to the fact that, in comparison to the first and second waves, hospitals provided a large amount of high-quality personal protective equipment. Nurses used previous knowledge and experience, as well as the availability of a mental health team, to promote emotional stability, which helped them cope with difficult tasks and reduced distress.

This result agrees with that of a study done in China by Hong et al., (2021) and in Italy by Lenzo, Quattropani, Sardella, Martino, and Bonanno (2021), which found lower rates of depressive and anxiety symptoms among nurses. Additionally, Wu et al. (2020) added that feelings like worry and anxiety increased in the early phases of an epidemiological crisis but quickly decreased as the crisis progressed. Nonetheless, the findings contradict research done in Wuhan by Lai et al. (2020), which found that healthcare workers, especially frontline workers, experienced more severe depression, anxiety, sleeplessness, and distress symptoms. This variation might be attributed to differences in study duration and demographic features of the current research participants.

Regarding the relationship between the demographic features of nurses and their professional quality of life, the present study revealed gender differences regarding burnout and CF scores, with women having higher levels of burnout and CF than men. This could be due to the increased prevalence of

feminization among healthcare workers, which indicates that women are predominantly responsible for front-line care, or it could be impacted by women's societal participation in caregiving, as evidenced by prior research (Ruiz et al., 2020). However, this study contradicted Ferri, Guerra, Marcheselli, Cunico, and Lorenzo (2015), who found gender differences in empathic sensitivity, with females being more susceptible than males.

In terms of compassion satisfaction, the present study revealed that nurses aged 40–50 years old had the highest levels of CS. This might be because professionals in this age group have more job stability and are more likely to get patient aid. This is in line with the findings of a previous Chinese study, which found that being 36 years old or older was related to a higher level of compassion satisfaction (Wang et al., 2020).

Nurses with a higher educational level reported less burnout and fatigue, while nurses who took part in COVID–19-related training reported significantly better levels of compassion satisfaction than those who did not. These findings were supported by the fact that highly educated nurses gained more knowledge, greater personal empowerment, and self-efficacy throughout their university education. The same finding was reported by Hunsaker et al. (2015), who observed that higher education levels were correlated with lower levels of compassion fatigue among nurses. Education level emerges in other studies as a factor in alleviating the impacts of CF on critical care nurses. Furthermore, the current study revealed that nurses during the morning shift had higher fatigue and burnout with a statistically significant difference. This may be due to the heavy workload and increased demands on the morning shift.

According to the present study's findings, nurses over the age of 50 had higher levels of anxiety and depression than younger nurses. However, in research by Yildirim, Atas, Asafov, Yildirim, and Balibey (2020), it was shown that young healthcare workers had higher anxiety levels than older ones. While Lai et al. (2020) contradict this finding, in addition, Hong et al. (2021) found that during the SARS pandemic, younger nurses had a

higher chance of experiencing psychological morbidity. Middle-aged nurses, on the other hand, were at a higher risk of anxiety, which might be attributed to their fear of infecting their families.

There was a significant difference in the frequency of depression among married, single, and widowed nurses. Nurses who were widowed had a higher risk of developing depression. It could be explained that widow nurses went through more changes in their lives, had more obligations, and didn't have the support of their husbands. According to several studies, married nurses experience more severe depression than single nurses and vice versa (Halvani et al., 2012).

In the current study, nurses who work night shifts had a greater risk of depression than those who work morning shifts. Working the night shift, according to Mekonen, Shetie, and Muluneh (2020), can lead nurses to lose control of their lives, induce a sense of powerlessness, cause sleeplessness, and other psychological difficulties.

According to the current findings, participants who received COVID–19 epidemic training reported significantly lower levels of anxiety and depression than those who did not receive such training. This could be due to insufficient infection control training, knowledge deficiency, and tasks that were not clearly defined exacerbated the likelihood of anxiety during the pandemic. Understanding the nature of diseases, standardized protective measures, increased confidence, and improved compliance with infection control measures can all help to lower the risk of mental illness. This finding was supported by a study conducted by Cui et al. (2021) in China.

When examining the relationship between PROQOL5 subscales, anxiety, and depression, the results revealed that compassion satisfaction negatively correlated with anxiety and depression. Nurses with higher levels of compassion satisfaction had lower levels of anxiety and depression. Also, the results revealed a significantly positive correlation between burnout, compassion fatigue, anxiety, and depression. The previous findings agree with Hegney, Craigie, and Hemsworth (2014), who reported that compassion satisfaction had

a significant negative correlation with depression and compassion fatigue had a significant positive correlation with anxiety and depression. It may be attributed to those nurses suffering from high levels of compassion satisfaction that they can provide competent and compassionate care, serving as a protective factor against anxiety and depression. Furthermore, compassion satisfaction serves as a source of strength for nurses, allowing them to continue working even with hazardous working circumstances, poor patient outcomes, and high-stress levels.

Conclusion:

Based on the findings of this study, it can be concluded that nurses have a moderate level of compassion fatigue, burnout, anxiety, and depression, as well as a statistically significant relationship between professional quality of life and anxiety and depression, which could be a major factor in the professional quality of life deterioration.

Recommendation:

- Emergency nurses require enough support as they attempt to manage the COVID-19 outbreak and establish early treatment options.

- A resilience program should be implemented to reduce stress and inspire nurses to work efficiently during these difficult times.

- During this time of job overload, peer support is crucial. Encouragement of communication and support of each other can enhance the staff's mental health.

- Organizational approaches must be structured in such a way that they provide nurses with a psychologically relaxing and secure atmosphere.

Conflicts of interest

There are no conflicts of interest.

Acknowledgments

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