

Original Article

## Assessment of Nurses' Stress and Coping Responses during Covid-19 Pandemic: Isolation and Quarantine Hospitals at El-Beheira Governorate

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### Abstract:

**Background:** During COVID-19 global health care crisis, the systems of health care around the world as well as the financial, emotional, and physical well-being of their health care workers (HCWs) are at risk due to the overwhelming burden caused by the illness and its mortality nature. Nurses play a crucial role in fighting pandemics, also they are at greater risk of COVID-19 infection due to their duties full of stressors that may endanger their health, that require effective coping strategies. **Objective of the study:** This research paper aims to assess the stress, the coping responses of nurses, and the relationship between them throughout the COVID-19 outbreak in isolation and quarantine hospitals at El Beheira Governorate. **Methods and materials:** **Design:** In this study, a descriptive correlational design was used. **Setting:** The study was performed in the isolation and quarantine hospitals at El Beheira Governorate. **Sampling:** A random sample of 300 nurses participated in the study and selected through proportional allocation from the previously mentioned settings. **Study Tools:** This study employed two tools. namely, tool (I) is COVID-19 Nursing Stress questionnaire including the nurses' sociodemographic characteristics and a survey of nurses' stress level regarding COVID-19 pandemic, while tool (II) is way of coping questionnaire. **Results** It was noticed that less than one fifth (17.7%) of the nurses had high stress, and less than one quarter (23.7%) had low stress. It was found that over 25% (28.7%) of the nurses used emotion-focused coping strategies at a high level, while over one third (34.0%) of the nurses used cognitive-focused coping strategies at a high-level **Conclusion:** From the previous results it was concluded that stress is a prevailing problem among nurses that require continuous workshops and training courses to help them dealing with their perceived stress.

**Keywords:** Coping Responses, COVID-19, El Beheira Governorate, Isolation hospitals, Nurses, Quarantine Hospitals, Stress.

### Introduction:

COVID-19 had spread around the world, causing 94 million people get affected and killing about 2 million by January 2021. The term COVID-19 refers to a newly discovered coronavirus illness in 2019 that is brought on by the SARS-CoV-2 virus, which causes severe acute respiratory syndrome. Due to its highly contagious nature, this illness has rapidly spread over the globe and turned pandemic. As COVID-19 spread,

healthcare systems were overloaded, which put a lot of psychological strain on nurses caring for COVID-19 patients.<sup>(1,2)</sup>

In Egypt, in order to effectively control the spread of COVID-19 infection general hospitals have set aside areas within their buildings specifically designated for COVID isolation. These areas are used to manage emergency suspected COVID-19 cases, while non-emergency cases are referred to fever or chest hospitals, which serve as triage hospitals and receive all suspected COVID-19 cases that are either referred from general hospitals or by walk-in or hotline patients. Alongside other members of the health team, nurses who work in COVID-19 isolation areas in triage hospitals or general hospitals constitute the defense front line (FL) against COVID-19.<sup>(3)</sup>

Nurses are more likely to contract the COVID-19 virus while performing their duties, and they are essential throughout the pandemic's combat. The nurses are the medical professionals who are caring for the patients around-the-clock and offering psychological and emotional support during this outbreak; however, the ward duties, isolation, and quarantine days cause significant emotional disturbances and stress among the nurses.<sup>(4-6)</sup>

Particularly among nurses, occupational stress is a rapidly rising cause of work-related illnesses and injuries. The co-occurrence of innumerable deaths and extended work shifts filled with a wide range of unknowns and demands can cause anxiety and depression, which makes occupational stress related to COVID-19 an important marker of mental illness. In order to reduce the possibility of infection within their family, nurses must also balance their obligations to their families and their jobs. The main causes of mental health issues include feeling stigmatized by society, job-related stress, a lack of knowledge, and a shortage of personal protective equipment.<sup>(7,8)</sup>

Coping strategies refer to behavioral and cognitive techniques that are employed to efficiently control stressful circumstances and factors that impact the quality of care given during clinical duties. At work, front-line nurses used a variety of coping techniques, including behavioral control, psychological empowerment, team cohesion, and emotional confidence. The outcomes of an individual's improved physical and mental health are greatly influenced by effective coping strategies.<sup>(9)</sup> Thus, this study implemented different ways of coping strategies; Confrontive Coping, Distancing, Self-Controlling, Seeking Social Support, Accepting Responsibility, Escape-Avoidance, Planful Problem Solving, and Positive Reappraisal.

The nurse as educator has a crucial role in mitigating stress and developing appropriate coping strategies. Their responsibilities include assessing and identifying different sources of stress, investigating beneficial coping mechanisms, and alleviating work environment stress through compassionate communication. They also plan health programs focused on mental and psychological well-being during crisis and outbreaks, with the assistance of professional psychological counselors. Additionally, the nurse as educator designs educational programs for healthcare workers on disease management, self-protection, and effective stress management strategies.<sup>(10)</sup>

### **Significance of the study:**

Global healthcare systems have faced an unprecedented challenge and stressors because of the COVID-19 outbreak. During this pandemic, nurses were presented with a perfect storm of circumstances that jeopardize their health, happiness, and capacity to carry out their duties.<sup>(11)</sup> Medical professionals who are under stress at work may be unable to provide patients with high-quality care. Stress at work can be costly because it can result in missed work or even a change of position.<sup>(12)</sup> Proper healthy coping strategies are required for proper management of such challenging stressors especially during crisis. The results of this study will have implications in directing future research on the stress-coping response of nurses that impact the nursing profession and the nurses' mental and psychological health and provide direction for occupational and psychosocial workplace programs.<sup>(13)</sup>

**Objective of the study:**

This present study aimed to assess the stress, the coping responses of nurses, and the relationship between them throughout the COVID-19 pandemic in isolation and quarantine hospitals at El Beheira Governorate.

**Research questions**

1. What are the stress levels among nurses during the COVID-19 Pandemic in isolation and quarantine hospitals at El-Beheira Governorate?
2. What are the coping responses of nurses during the COVID-19 Pandemic in isolation and quarantine hospitals at El-Beheira Governorate?
3. What is the relationship between the type of coping responses used by nurses and their level of perceived stress during the COVID-19 Pandemic in isolation and quarantine hospitals at El-Beheira Governorate?

**II. Materials and Methods**

**Research Design:**

A descriptive correlational design was followed in the present study.

**Setting:**

The study was conducted in isolation and quarantine hospitals officially designated for handling COVID-19 patients at El Beheira Governorate. These hospitals namely; Damanhur Fever Hospital (Sorting and Isolation), Damanhur Chest Hospital (Sorting and Isolation), Kafr El-Dawar Fever Hospital (Sorting and Isolation), and Kafr El-Dawar General Hospital (Quarantine Hospital). All these facilities affiliated with Egypt's Ministry of Health and population.

**Sampling:**

- A sample of nurses accounted 300 nurses was used in the present study. The nurses work full time in isolation and quarantine hospitals where patients with COVID-19 received care.
- Total population was calculated by using (**EPI info7.0**) sample size estimation program based on the entire number of population (992) nurses working at the previous mentioned location in El-Beheira Governorate, A fifty percent predicted frequency, a 5% allowable margin of error, and a 95% confidence coefficient. This led to the minimum sample size of 277 nurses that was needed. To account for potential non-response, this number of nurses was raised to 300.
- They were selected through proportional allocation from the settings that had been mentioned before. 300 nurses from the study's study samples in the aforementioned settings were admitted, as indicated in table (1).

**Table (1): Distribution of nurses who work in isolation and quarantine hospitals where patients with COVID-19 received care in El Beheira Governorate:**

Settings	Total Number of Nurses	Proposed sample
• Damanhur Fever Hospital (Sorting & Isolation)	187	$187 \times 300 / 992 = 56$

• Kafr El-Dawar Fever Hospital (Sorting and Isolation)	175	$175 * 300 / 992 = 53$
• Damanhur Chest Hospital (Sorting and Isolation)	300	$300 * 300 / 992 = 91$
• Kafr El-Dawar General Hospital (Quarantine Hospital)	330	$330 * 300 / 992 = 100$
<b>Total</b>	<b>992</b>	<b>300</b>

### Study Tools:

Two tools were created by the researcher following a review of the relevant literature and references related to the research topic

#### Tool I: COVID-19 Nursing Stress Survey:

It was adapted from Nursing Stress Survey (SARS) which was developed by Peladeau' (2006) <sup>(14)</sup> to measure stress among nurses during the Severe Acute Respiratory Syndrome (SARS) Outbreak. It is a self-administered questionnaire including the following two parts:

**1<sup>st</sup> Part: The demographics of the nurses under study include;** Age, sex, educational attainment, marital status, number of children living at home, years of nursing experience, department of employment, number of times they directly cared for a patient with COVID-19, working shift, and COVID-19 in-service training.

#### 2<sup>nd</sup> Part: Nurses' stress level related to COVID-19 Pandemic:

It asked respondents to rate 24 symptoms associated with perceived stress using a four-point Likert scale, where 0 represents (never) and 3 represents (all the time) with possible total score ranged from 0 to 72, classified into three levels as follows, a mild stress was set at 0 - 24, a moderate stress at 25 - 49, and a high symptom count indicating a high stress was set at 50 – 72. The item 24 asked respondents to rate their degree of stress during the COVID-19 pandemic from least to most as compared to other stressful situations in their life. The same four-point Likert like scale was used.

#### Tool II: Questionnaire on Coping Strategies:

Folkman and Lazarus (1985) <sup>(15)</sup> created the tool. The researcher used the instrument to look into how nurses coped with stressful circumstances like COVID-19. Confrontive coping, distancing, self-control, searching for social support, agreeing with responsibility, escape-avoidance, planful solving of issues, and positive reappraisal were the eight subscales that made up the questionnaire's 66 total questions. The survey uses a 4-point Likert scale, with possible total scores ranging from 0 to 198. The scale goes from 0 (not used) to 3 (used a lot). Higher scores indicate greater use of that coping strategy. The results were calculated using the raw scores method.

### Methods:

1. The hospital administrators of Damanhur Fever Hospital received an official letter from the dean of the nursing faculty at Damanhur University (Sorting and Isolation), Damanhur Chest Hospital (Sorting and Isolation), Kafr El-Dawar Fever Hospital (Sorting and Isolation), Kafr El-Dawar General Hospital (Quarantine Hospital) to gather the information required to carry out the research.
2. The tools were adopted by the researcher except the demographic data was adapted after reviewing current related literature.

3. Five specialists in the nursing education field evaluated the tools' content validity after they had been translated into Arabic.
4. A pilot study was performed on 10% of nurses (n=30) who were not among the total subjects in order to verify and validate the tools' applicability, clarity, and viability. Nothing had been changed that needed to be changed.
5. The Cronbach's Alpha statistical test was utilized to assess the tools' reliability. The tools demonstrated reliability with  $r = 0.943$  for the stress scale in tool I and  $r = 0.880$  for the coping scale in tool II.
6. Subjects were randomly selected from the nurses caring with COVID-19 patients in the different shifts and departments. Four months of data collection, from February to the end of May 2021, were undertaken.
7. The researcher collected data for this study by giving the subjects of the study a hand-delivered questionnaire, they were be asked to return them back.
8. Safety and preventive precautions were adhered against COVID-19 infection at the time of data collection, e.g., well-ventilated and large place were used, nurses were met on many batches, social distancing, commitment to wear the face mask, hand washing and disinfecting hands with alcohol before the delivering and receipting the questionnaire, personal pens were used, and a box where be assigned for receiving papers).

#### **Statistical analysis:**

- The collected data were coded and entered in a specific format to be suitable for computer feeding.
- After data entry, a checking and verification process was conducted to ensure that there were no errors.
- The statistical package for social sciences (SPSS, version 26) was used to analyze the data.
- The descriptive statistical measures, which include numbers, percentages, and averages (minimum, maximum, arithmetic mean), and standard deviation (SD), were employed in the statistical analysis. The student T test, F ANOVA test, Pearson correlation coefficient, Cronbach's Alpha, and Chi square were among the statistical analysis tests that were employed.

#### **Ethical considerations:**

- The Faculty of Nursing's ethical committee granted research approval before the study was launched.
- The protection of respondents' rights was achieved through voluntary participation.
- Informed consent was used, which included explanations of the study's goals, timing, possible advantages, and data collection procedures.
- The respondents received guarantees that their data would be handled with strict confidentiality and that they could withdraw from the study at any moment.
- The respondents' anonymity was preserved because they were not compelled to provide their names.

#### **Results:**

##### **First: Demographic and health data:**

**Table No. 2** displays the distribution of the nurses under study based on their academic records and sociodemographic traits. It notes that more than one tenth (13.7%) of nurses were under 25 years old, while less than one fifth (16.0%) were over 45. Also, the majority (91.3%) were female, and most (85.3%) were married, with less than a third (30.9%) having two or more children. Educationally, fewer nurses (23.3%) held only a secondary school diploma, while more than one third (35.3%) had a bachelor's degree in nursing, and 11.3% had pursued postgraduate studies. In terms of work units, around one-third (33.3%) worked in isolation units, and a similar percentage (36.0%) worked in intensive care. Additionally, a fraction (15.3%) worked in dialysis or emergency units. And according to the experience, a quarter (25.3%) had less than five years of experience, and less than two-fifths (39.0%) had provided direct care to COVID-19 patients for six weeks or more. Almost all (97.2%) had received prior training on infection control precautions during the COVID-19 pandemic.

**Table (2):** Distribution of the nurses under study according to their socio demographic characteristics and academic data.

socio demographic characteristics and academic data	Total (n= 300)	
	No.	%
<b>Age (years)</b>		
▪ <25	41	13.7
▪ 25-	138	46.0
▪ 35-	73	24.3
▪ ≥45	48	16.0
<b>Gender</b>		
▪ Male	26	8.7
▪ Female	274	91.3
<b>Marital status</b>		
▪ Single	44	14.7
▪ Married	256	85.3
<b>Have children</b>	<b>n= 256</b>	
▪ No children	31	12.1
▪ One child	146	57.0
▪ Two child and more	79	30.9
<b>Level of education</b>	<b>n= 300</b>	
▪ Secondary school diploma	70	23.3
▪ Technical institute of nursing diploma	90	30.0
▪ Bachelor degree of nursing	106	35.3
▪ Post graduate studies	34	11.3
<b>Working department</b>		

▪ Isolation unit	100	33.3
▪ Intensive care unit	108	36.0
▪ Dialysis unit	46	15.3
▪ Emergency unit	46	15.3
<b>Years of experience</b>		
▪ <5	76	25.3
▪ 5-	119	39.7
▪ 15-	61	20.3
▪ ≥25	44	14.7
<b>Period of care (weeks)</b>		
▪ <4	93	31.0
▪ 4-	90	30.0
▪ ≥6	117	39.0
<b>Previous training on infection control of COVID- 19</b>		
▪ No	18	6.0
▪ Yes	282	94.0

**Table No. 3-1** illustrates the distribution of the nurses under study according to the level and mean score of their stress during COVID- 19 in the isolation and quarantine hospitals. It was observed that less than one quarter (23.7%) of the nurses experienced low level of stress and less than one fifth (17.7%) experienced high level of stress. The mean stress score was  $34.45 \pm 14.77$  and a mean percent score of 47.85%.

**Table (3-1):** Distribution of the nurses under study according to the level and mean score of their stress during COVID-19 in the isolation and quarantine hospitals.

Items	Levels of Stress					
	Low		Moderate		High	
	No.	%	No.	%	No.	%
<b>A. Nurses' Stress</b>	71	23.7	176	58.7	53	17.7
<b>Min- Max</b>	2.0 – 72.0					
<b>Mean ±SD</b>	$34.45 \pm 14.77$					
<b>Mean Percent Score</b>	47.85					

**Table (3-2)** shows the distribution of the nurses according to their opinion about overall stress being faced during COVID- 19 pandemic (responses of the question 24).

It was found that two thirds (66.7%) of the nurses had stress all the time, and less than one quarter (22.0%) of them had stress most of the time. While 8.0% of the nurses had stress little time and only 3.3% of them had no stress.

**Table (3-2): Distribution of the levels of stress that nurses' have been going through during the COVID-19 pandemic.**

responses of the question 24	Frequency	Percent
Not once	10	3.3
Little time	24	8.0
Most of the time	66	22.0
all the time	200	66.7
Total	300	100.0

**Second: Studied nurses' coping responses regarding COVID-19 Pandemic.**

**Table (4):** shows the distribution of the nurses under study according to the levels of used coping strategies, with respect to the emotion focused strategies. It was noticed that a significant portion of nurses exhibited high utilization of certain coping strategies. Specifically, more than a third (34.0%) had a high level of use, with only 8.0% reporting low usage. Additionally, fewer than a quarter (24.3%) used escape avoidance highly, while a higher percentage (40.3%) used distancing, While, the positive reappraisal and seeking social support were utilized by less than two-thirds of nurses (65.7% and 61.0%, respectively). In terms of cognitive-focused strategies, over a quarter (28.7%) had high usage levels, with similar percentages for confronting (29.0%) and accepting responsibility (40.0%). Approximately half of the nurses (50.3%) employed self-control, while a majority (57.7%) used planful problem-solving at a high level.

**Table (4): Distribution of the nurses under study according to the level of the used coping strategies (By domains).**

Domains of used coping strategies	Levels of Use					
	Low use		Moderate use		High use	
	No.	%	No.	%	No.	%
<b>B. Emotion focused Strategies</b>	<b>4</b>	<b>1.3</b>	<b>194</b>	<b>64.7</b>	<b>102</b>	<b>34.0</b>
- Escape avoidance	24	8.0	203	67.7	73	24.3
- Distancing	27	9.0	152	50.7	121	40.3
- Positive reappraisal	10	3.3	93	31.0	197	65.7
- Seek social support	2	0.7	115	38.3	183	61.0



Domains of used coping strategies	Levels of Use					
	Low use		Moderate use		High use	
	No.	%	No.	%	No.	%
<b>C. Cognitive focused Strategies</b>	<b>2</b>	<b>0.7</b>	<b>212</b>	<b>70.7</b>	<b>86</b>	<b>28.7</b>
- Self-controlling	4	1.3	145	48.3	151	50.3
- Planful problem solving	20	6.7	107	35.7	173	57.7
- Accept responsibility	28	9.3	152	50.7	120	40.0
- Confrontive	56	18.7	157	52.3	87	29.0

**Third: Relationship between the type of coping responses of nurses and their level of perceived stress:**

**Table (5)** illustrates the relationship between the nurses' mean stress score and their level of use of coping strategies. Nurses who utilized emotion-focused coping strategies at a low level had lower stress mean scores compared to those with high usage ( $24.00 \pm 1.155$  and  $39.58 \pm 15.52$ , respectively), showing a significant relationship ( $F=1052$ ,  $P=0.000$ ). Similarly, nurses with low levels of cognitive coping strategy usage had higher stress mean scores compared to those with high usage ( $72.00 \pm 0.000$  and  $39.76 \pm 15.69$ , respectively), with a statistically significant relationship ( $F=16.645$ ,  $P=0.000$ ).

**Table (5): Connection between the mean stress score of the nurses and the extent to which they employ emotionally and cognitively focused coping mechanisms.**

coping strategies	Mean Score of stress	Test of Significance
	Mean $\pm$ S. D	
<b>Emotion focused coping</b>		
▪ Low use	24.00 $\pm$ 1.155	F=10.52 P= 0.000*
▪ Moderate use	31.96 $\pm$ 13.77	
▪ High use	39.58 $\pm$ 15.52	
<b>Cognitive focused coping</b>		
▪ Low use	72.00 $\pm$ 0.000	F=16.645 P= 0.000*
▪ Moderate use	31.94 $\pm$ 13.38	
▪ High use	39.76 $\pm$ 15.69	

F ANOVA Test \* Statistically significant at  $p \leq 0.05$

**Discussion:**

Healthcare systems around the world are facing an unprecedented challenge as a consequent to the novel coronavirus disease (COVID-19) pandemic. <sup>(1, 2)</sup> The pandemic has presented nurses with a

perfect storm of circumstances that jeopardize their health, wellbeing, and capacity to carry out their duties.<sup>(16)</sup>

The majority of respondents (91.3%) were female, and most (85.3%) were married, and they expressed higher levels of stress. This result is in line with Zhang et al.'s finding that the most prevalent risk factor for depression, stress, and insomnia was female.<sup>(17)</sup> Different research revealed that the effects of sex on mental health were not the same. Male health workers in an Ebola outbreak reported higher levels of mental distress.<sup>(18)</sup> This was different from our findings; however, since there were only 26 male nurses in this study, the conclusions should only be used in that context. More research is also required.

In line with the findings of Shanafelt et al., 87.8% (225) of the respondents reported having higher stress levels. (19) and was contrary to Chen et al.'s (20) findings, which showed that nurses with more than two children experienced the lowest levels of job stress. In contrast, the greatest levels of workplace stress were reported by childless nurses, who were also more likely than other nurses to use unhealthy coping mechanisms as a consequence of their stress. The opposite outcome could possibly have been triggered by the survey's timing. Within the pandemic, nurses protected their children from infection. Child care became more of a burden when schools closed. The dual burden was causing their anxiety to increase.

Besides extreme fatigue, physical discomfort from extended work hours wearing face masks and other personal protective equipment, fear of infection, and emotional distress are also common among nurses<sup>(21)</sup>. This COVID-19 outbreak's defining characteristic is the physical and psychological toll it takes on a nursing workforce already under stress.<sup>(22)</sup> These could explain the results of the present study where more than half of The nurses under study had moderate level of stress and less than one fifth of them had raised level of stress.

In the same context, the results of Tomaszewska, K et al 2022 found that that over 90.0% (majority) of the nurses had moderate, severe, and very severe stress. Moreover, 43.2% of respondents selected the option frequently, with 47.5% of the nurses responding that they experienced stress at work during each duty station.<sup>(23)</sup> According to a different study by Tomaszewska, K. et al. (2022), up to 90% of healthcare professionals reported feeling stressed and anxious due to an increase in stressful situations, while 50.4% of medical professionals, including nurses, reported depressive episodes. The most prevalent stressors include the pandemic's often-unmanageable effects, such as dealing with patients' deaths whose treatments have not been successful, feeling helpless, and spreading the infection to family members.<sup>(24)</sup> Additionally Zhang et al (2020). discovered that female nurses who cared for COVID-19 patients experienced higher stress and depressive symptoms.<sup>(17)</sup>

Moreover, the present study assumed that two thirds of the nurses under study feeling stressed all the time, and less than one quarter of them stated that they feel stressed most of time. Similar results were noticed in a study done by Kabunga, A et al 2021, where more than half of The nurses under study had stress and emotional exhaustion most of time during COVID- 19 pandemic while working in isolation hospitals mainly because of increased work load, personal protective equipment this may account for increased infections of the healthcare workers.<sup>(25)</sup> Another study done by Akku,s, Y et al 2022, found that most of the nurses reported fear, stress and worries all time while working with COVID- 19 patients.<sup>(26)</sup>

In a profession known for being stressful, nurses are unable to completely eliminate stress at work, particularly in emergency scenarios like the COVID-19 pandemic. However, they can manage its impact. Several coping mechanisms can be used to manage stress<sup>(27, 28)</sup> The results of this study clearly show that the nurses under investigation mostly employed emotion-focused coping strategies, followed by cognitive-focused coping strategies. Similar outcomes were documented. in several studies done on the medical staff during COVID- 19 pandemic and found that there were several coping strategies used to manage staff stressors such as active coping, distancing, self-controlling, seeking social support,

accepting responsibility, avoidance, problem solving, and positive reappraisal. In addition to use of protective measures and following infection control measures.<sup>(29, 30)</sup>

In this study the higher percentage of nurses (40.3%) used distancing, While, the positive reappraisal and seeking social support were utilized by the percentage of (65.7% and 61.0%, respectively). On the other hand, a study of Siemianowska et al (2018) conducted prior to the pandemic revealed that Polish nurses typically selected proactive coping, preparation, self-distraction, obtaining emotional support, and optimistic<sup>(31)</sup>

There were only two articles mentioned nurses using an avoidance strategy<sup>(32, 33)</sup> According to the majority of participants in an Alabama study by Ali H et al (2020).<sup>(32)</sup> updates on COVID-19 infection and mortality statistics were not reported by the media. Sheroun D et al (2020).<sup>(33)</sup> claim that false news reports have contributed to people's anxiety and fear

According to this study, having social support during the COVID-19 pandemic can help people cope with stress. Cai H et al. (2020).<sup>(34)</sup> pointed out that prior research has demonstrated that a positive outlook and support from friends and family can lessen stress during pandemics like COVID-19, corroborate this finding. Htay M et al (2021).<sup>(30)</sup> state that the World Health Organization (WHO) gave self-care advice to healthcare professionals, including nurses, with a focus on maintaining healthy lifestyles and obtaining informal social support.

Huang L et al. 2020 provided evidence that the choice of coping mechanisms can be influenced by one's thought patterns. They also have a negative correlation with mental health, being positively correlated with problem-focused coping and negatively associated with emotion-focused coping. Stated differently, individuals with better mental health typically employ problem-focused coping mechanisms.<sup>(35)</sup>

This was portrayed in the present study findings where the higher the stress level, the more use of emotional focused coping strategies and the lesser use of cognitive focused coping strategies. The fact that emotion-focused coping refers to coping mechanisms meant to lessen emotional distress as opposed to altering the situation itself may have something to do with this. People who practice emotion-focused coping are better able to control their emotions, maintain composure, lessen anxiety, or develop happy feelings. In case of Covid-19 pandemic, the nurses may understand that this crisis may extend over a period of time and their presence in isolation and quarantine hospital would continue, so they choose better to confronting, exploring, and understanding their negative emotions, regulate them to continue their work properly.

Similar outcomes were documented. by studies done by Karakurt N et al 2022, Rashidi N et al 2022 and Sierakowska M et al 2022 who noticed negative correlation between stress scores and cognitive focused coping strategies, and a positive correlation between stress scores and emotion-focused coping strategies.<sup>(36, 37, 38)</sup> Furthermore, a study by Cai et al. 2020 that examined the psychological effects and coping mechanisms used by front-line medical personnel during the global coronavirus epidemic discovered a negative association between anxiety, depression, and problem-focused coping mechanisms.<sup>(39)</sup>

Finally, the knowledge gleaned from this study's findings might help nurses deal with the difficulties and stress brought on by the COVID-19 pandemic. The creation and execution of successful interventions aimed at enhancing nurses' coping mechanisms amidst the COVID-19 pandemic ought to be guided by these findings.

### **Conclusions and Recommendations:**

#### **Conclusions:**

According to the study, only a small percentage of nurses reported low or high stress levels (less than 25% or less than 5% respectively). Over one-third of the participants frequently used emotion-

focused coping strategies, whereas a small portion used them infrequently. Also, cognitive-focused coping strategies were heavily utilized by a considerable proportion of nurses. There was a significant correlation between stress levels and the utilization of emotion-focused coping strategies at a low level, as well as between stress levels and the use of cognitive coping strategies. Specifically, nurses who used cognitive coping strategies less reported higher stress levels compared to those who used them more frequently.

### Recommendations:

The following recommendations were reached in the light of the results of this study:

#### In nursing serves:

- Hospital policy should include programs for psychological counseling and support for front-line nurses, particularly during times of crisis.
- Offering COVID-19 protection training courses; all nurses, particularly those employed in isolation hospitals, should always have access to personal protective equipment.
- Raising public understanding and appreciation of the importance of front-line nurses' work in preventing social stigma.
- In order to maintain the psychological health, safety, and well-being of nurses, healthcare managers must identify potential organizational interventions by identifying the sources of stress.
- Additional qualitative and longitudinal studies ought to be carried out to evaluate the effects of various pandemic phases on nurses' psychological responses and adjustments.

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