Original Article

Emotional Stress Reaction and Coping of Nurses in Specialized Areas and General Wards During COVID-19 Outbreak: A Comparative Study

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Abstract - The coronavirus disease has caused many nurses to experienced overwhelming emotional stress. Several types of research have focused on the psychological and mental health of nurses during the COVID-19 outbreak. The study determined the emotional stress reaction and coping of nurses. A descriptive comparative design was used. 76 nurses participated in the study recruited through snowball sampling. Nurses in the specialized areas felt concerned (M=3.41±0.77), and nurses in the general wards felt that being alert (M=3.34±0.64) was highly demonstrated during the outbreak. Nurses coping in specialized areas deal with the problem by waiting them out and seeing if it doesn't take care of itself (M=2.60, SD=0.92). Nurses in the general wards showed that they try to remember the problem is not as serious as it seems (M=2.30±0.87). The emotional stress reaction has a significant relationship to the nurses' coping scale (p=0.000). There is no significant difference in the emotional stress and coping of nurses between the two groups. Nurses felt emotionally alert and concerned during the COVID-19 outbreak. This result provides a theoretical underpinning that improves the psychological aspect and mental health of nurses. In this way, nurses will be able to meet standards of nursing care amidst the COVID-19 outbreak.

Keywords – Coping, COVID-19 Outbreak, Emotional stress, General Ward, Specialized Areas

I. INTRODUCTION

The coronavirus disease (COVID-19) pandemic has caused many nurses to experience an overwhelming level of stress. Several research studies have mainly focused on psychological distress and the mental health of front liners during the COVID-19 outbreak. The COVID-19 pandemic has put everyone at risk for stress, especially healthcare professionals. Various researches have shown that nurses reported mild to moderate levels of stress. In the study about psychological, Oktovin et al. [1] identified that nurses are at risk of coronavirus disease. A qualitative study of Arnetz et al. [2] found that nurses (n=455) reported stressful situations during the COVID-19 pandemic and identified that exposure/infection-self, illness/death-others, workplace, personal protective equipment/supplies, unknowns, and opinions/politics contribute to their stress in the care of patients. In Italy, a study about the Italian medical staff during the Covid-19 pandemic by Marinaci et al. [3] revealed that emotional distress and psychosomatic syndrome (PS) were responses experiences among health workers. A cross-sectional study in Vietnam by Than et al. [4] on mental health and health-related quality of life (HRQoL) outcomes showed that healthcare workers reporting to COVID-19designated hospital had a significantly higher rate of mental health problems and had lower HRQoL.

Meanwhile, a qualitative study by Lui et al. [5] on the experiences of health care providers during the COVID-19 crisis in China revealed results of data. The study found that health care providers thought that "being fully responsible for patients' wellbeing" was their line of duty. The health care providers were challenged by working in a new context, exhaustion due to heavy workloads and protective gear, fear of becoming infected and infecting others, feeling powerless to handle patients' conditions, and managing relationships in this stressful situation. The health care providers determined that their work demands them to be flexible amid the challenges of coronavirus outbreaks. In Spain, the study of Jiménez-Giménez et al. [6] indicated that health care professionals responded to the COVID-19 pandemic by showing the symptoms of depression, anxiety, emotional distress, burnout, post-traumatic stress, and poor sleep quality. The study recommended psychoeducation, mindfulness, and coping resources to combat the effects of acute stress.

The COVID-19 crisis increases health care workers' vulnerability to mental health issues. Monitoring rates of mood, sleep, and other mental health issues are an immediate need to understand mediating factors and inform tailored interventions [7]. As front-line workers, nurses opted to stay in the job. Their social, moral, and professional obligations motivate them to perform their functions like health care professionals amidst the pandemic [8].

Ghio et al. [9] found an increased level of anxiety, depression, PTSD, and high levels of burnout. A statistically significant association between burnout and insomnia, depression, anxiety, and post-traumatic symptoms. The result of the study indicates that during the COVID-19 pandemic, health workers showed high levels of psychological distress and that burnout is a predictor of sufferance. Sahebi et al. [10] identified that anxiety and depressions is highly prevalent during the COVID-19 pandemic.

Notably, Shaukat et al. [11] identified physical and mental consequences in providing care to patients infected with coronavirus disease. The implementation strategies to reduce the chances of infections, shorter shift lengths, and mechanisms for mental health support could minimize cases of morbidity and mortality amongst health care workers. In their study, Zhang et al. [12] found that nurses are relatively stressed and consider issues related to families as frequent stressors. High burnout levels are among young nurses and those reporting longer work shifts.

Moreover, Ali et al. [13] found that most nurses experience stress because of fear that their friends and families will be infected. Young and less experienced nurses reported more stress levels compared to older, senior-level nurses. The findings of the study suggest that protective measures such as hand washing, use of face masks, avoiding public transportation, and crowded areas were not highly perceived coping strategies. A study by Conti et al. [14] found female care workers had a high level of anxiety and somatization symptoms. Also, the study found that younger participants reported higher levels of somatization, depression, anxiety, and post-traumatic symptoms. A mixed-method study conducted by LoGiudice and Bartos [15] about experiences of nurses working on various types of units expressed negative emotions, frustration, anxiety, and stress related to patient care and the continual changes in the proper use and allocation of PPE.

A descriptive phenomenological research design investigated by Hu et al. [16] over ICU nurses revealed that nurses went through four stages of providing care to patients with COVID-19. These experiences pointed out initial contradictory feelings, quick adaption to the 'new working environment' in the first 1–2weeks in the ICU, desperation, and survival. Being worried about getting infected with the virus and transmitting it to their loved ones was common in all stages of feelings.

There are several research studies conducted about the coping strategies of nurses during the COVID-19 pandemic. A regression analysis study performed by Lenzo et al. [17] demonstrated that emotional expression was statistically significant to explain depression among healthcare workers. The study found that the variables on age and the ability to perceive contextual cues are predictors of anxiety. The profile on age, work experience, and suppressing emotional expression were predictors of stress. In Saudi Arabia, Natividad et al. [18] about their study on feelings, stress, and coping strategies showed that female nurses, married, with bachelor's degrees, and aged 25–34 years demonstrated higher coping during the pandemic.

On the other hand, Filipino nurses assigned in the outpatient department and COVID-19 Isolation Ward expressed more negative feelings and stress but were coping better than others. The study concluded that religion, spiritual beliefs, and the presence of a support system were the coping strategies used by nurses to alleviate stress and negative feelings during the COVID-19 outbreak. In another study conducted by Rose et al. [19] on healthcare workers' emotions, perceived stressors, and coping mechanisms during the covid-19 concluded that camaraderie and teamwork reduce their level of stress. Additionally, Htay et al. [20] concluded in their study that the promotion of coping methods encourages health care workers to practice their profession amidst this COVID-19 outbreak.

Finally, the COVID-19 pandemic affected the lives of healthcare professionals providing direct care to patients. Thus, the researchers intend to determine the emotional stress reaction of nurses and coping strategies in specialized and general wards while facing the pandemic situation.

II. MATERIALS AND METHODS

A. Study design

The study utilized a descriptive comparative design to determine nurses' emotional stress reaction and coping strategies when dealing with problems during the COVID-19 outbreak. The study was conducted from February 2021 to April 2021 among nurses assigned from various departments in a government and private hospital. It applied the following criteria: a registered nurse regardless of years in practicing nursing assigned in any special nursing areas and general wards and willing to answer the electronic questionnaire.

B. Sampling procedure

There are seventy-six (76) Filipino nurses who participated in this study. A nonprobability snowball sampling technique was used to recruit the respondents from specialized areas and general wards.

C. Data collection

The self-administered online questionnaire consisted of demographic characteristics and an emotional stress reaction questionnaire (measurement of stress reaction level in field conditions in 60 seconds) with 14 emotion words [21]. A four (4) point Likert scale ranging from 1

(the word does not correspond to how you felt right then) to 4(the word completely corresponds to how you felt right then) was employed in the study. The coping strategies [22] comprised of thirteen (13) methods of dealing with the problem. A four (4) point Likert scale was used, ranging from 1 (not true about me) to 4 (mostly true about me) was used to describe their level of coping. An electronic survey was used to collect data via an online google link. Informed consent was obtained before the start of the survey. The data result was retrieved from the google form, tallied in an excel sheet, and analyzed and interpreted.

Data were analyzed using SPSS version 25. Descriptive statistics such as frequency, percentage, standard deviation, and weighted mean were used to determine the distribution of responses and the highest and lowest mean scores. Pearson-r chi-square was utilized to find the correlation of sociodemographic characteristics. Independent sample T-test was used to measure significant differences between the mean scores of the emotional stress and coping of nurses assigned in the special areas and general wards. A p-value of less than or equal to 0.05 is considered significant.

Before study initiation, the study was reviewed by the research ethics committee at King Khalid University (HAPO-06-B-001) with approval no. of ECM#2021-3408.

III. RESULTS

A. Sociodemographic characteristics

Table 1 presents the sociodemographic characteristics of the respondents. The findings showed that most (72%) of the respondents were female nurses, and most (40%) of the participants' age ranges from 31 to 35 years old. More than half (66%) are single, and most (59%) work in the government sector. Most (29%) of the nurses who participated in the study were assigned to the operating room/theatre department. 16 nurses responded to the other option and were distributed to the senior department, catheterization laboratory, dementia unit, hyperacute stroke unit, endoscopy laboratory, tuberculosis treatment, infection control, and stroke rehabilitation. A few (11%) participants reported a master's degree in nursing as the highest education level. The final sample comprised 76 Filipino nurses, including 22 nurses from Ireland, 46 responded from the Philippines, 2 each in Singapore, UK, and Norway, and 1 each in Germany and New Zealand.

Table 1: Sociodemographic Characteristics (N=76)

Category	f	%
Age		
20 - 25 years old	12	15.8%
26 - 30 years old	26	34.2%
31 - 35 years old	30	39.5%
36 - 40 years old	5	6.6%
41 - 45 years old	1	1.3%
46 - 50 years old	1	1.3%
more than 50 years old	1	1.3%
Gender		
Female	55	72.4%
Male	21	27.6%
Marital Status		
Single	50	65.8%
Married	24	31.6%
Divorced	0	0.0%
Widowed	2	2.6%
Work Experience		
less than 1 year	3	3.9%
1 to 3 years	19	25.0%
4 to 6 years	20	26.3%
7 to 9 years	20	26.3%
10 to 12 years	10	13.2%
13 to 15 years	2	2.6%
more than 15 years	2	2.6%
Work Sector		
Private	31	40.8%
Government	45	59.2%
Area of Assignment		
Operating Room	22	28.9%
Delivery/Labor Room	4	5.3%
NICU	1	1.3%
ICU	5	6.6%
ER	10	13.2%
PICU	7	9.2%
Dialysis Unit	4	5.3%
Surgical Unit	2	2.6%
Medical Floor	5	6.6%
Others	16	21.1%
Highest Educational Level		
BSN, RN	59	77.6%
RN with master's studies	8	10.5%
RN with master's degree	8	10.5%
RN with doctorate studies	1	1.3%
RN with doctoral degree	0	0.0%
Country/State working in		
Ireland	22	28.9%
Philippines	46	60.5%
Germany	1	1.3%
Singapore	2	2.6%
UK	2	2.6%
New Zealand	1	1.3%
Norway	2	2.6%

B. Emotional Stress Reaction of Nurses during COVID-19 outbreak

The findings in table 2 show nurses' emotional stress reaction in the care of their patients during the COVID-19 outbreak. Nurses in the specialized areas felt concerned

(M=3.41, SD=0.77) during the outbreak. Nurses assigned in specialized areas were fairly demonstrated feeling relaxed during the pandemic (M=1.83, SD=0.89). On the other hand, nurses in the general wards felt that being alert (M=3.34, SD=0.64) was highly demonstrated. The reaction on being pleased (M=1.82, SD=0.98) and glad (M=1.82, SD=0.93) were fairly demonstrated by the nurses during the pandemic.

Table 2. Emotional Stress Reaction of Nurses (N=76)

Items	Mean±SD (Nurses in Specialized Areas, n=53)	Mean±SD (Nurses in General Wards, n=23)
Indifferent	2.62±.96	2.47±1.30
Relaxed	1.83±.89	2.00±.79
Pleased	1.86±.96	1.82±.98
Glad	1.92±1.03	1.82±.93
Alert	3.32±.82	3.34±.64
Focused	3.24±.80	3.30±.70
Concentrated	3.03±.73	3.04±.70
Energetic	2.52±.89	2.52±.79
Concerned	3.41±.77	3.30±.82
Uncertain	2.96±.89	2.91±.99
Disappointed	3.09±.83	3.04±.92
Heated	2.49±.89	2.47±1.03
Mad	2.18±.87	2.39±1.11
Angry	2.01±.93	2.08±.94

C. Coping of nurses

Table 3 shows the coping of nurses during the COVID-19 pandemic. Nurses in specialized areas deal with the problem by waiting it out and seeing if it doesn't take care of itself (M=2.60, SD=0.92). Nurses in the general wards, on the other hand, reported that they often try to remember the problem is not as serious as it seems (M=2.30, SD=0.87). Spending time understanding what happened in dealing with the problem obtained the lowest mean score for both nurses in special areas (M=1.41, SD=53) and general wards (M=1.26, SD=0.44).

Table 3. Coping of Nurses (N=76)

Items	Mean±SD (Nurses in Specialized Areas, n=53)	Mean±SD (Nurses in General Wards, n=23)
When dealing with a problem,		
I spend time trying to understand what happened	1.41±.53	1.26±.44
I try to see the positive side of the situation	1.56±.57	1.60±.58
I try to step back from the problem and think about it from a different point of view	2.01±.84	1.86±.91
I consider several alternatives for handling the problem	1.49±.60	1.52±.73
I try to see the humor in it	2.20±.88	2.08±.73
I think about what it might say about bigger lifestyle changes I need to make	1.92±.70	1.86±.81
I often wait it out and see if it doesn't take care of itself	2.60±.92	2.17±.83
I often try to remember that the problem is not as serious as it seems	2.35±.98	2.30±.87
I often use exercise, hobbies, or meditation to help me get through a tough time	2.03±.96	2.17±.98
I make jokes about it or try to make light of it	2.11±.89	1.95±.76
I make compromises	2.05±.71	2.04±.63
I take steps to take better care of myself and my family for the future	1.49±.60	1.60±.65
I work on making things better for the future by changing my habits, such as diet, exercise, budgeting, or staying in closer touch with people I care about	1.73±.62	1.86±.81

D. Relationship between sociodemographic characteristics and emotional stress reaction of nurses

The result of the study (Table 4) shows that there is no significant relationship (p-value=>0.05) between sociodemographic characteristics and the emotional stress reaction of nurses during the COVID-19 outbreak. The findings of this study revealed that the emotional stress reaction of nurses is not associated with the sociodemographic variables indicated in the study.

Table 4. Correlations of sociodemographic characteristics and emotional stress reaction of nurses

Variables	X^2	p-value
Age	10.322	0.921
Gender	4.834	0.184
Marital Status	2.455	0.873
Work Experience	12.929	0.796
Work Sector	5.877	0.118
Area of Assignment	17.064	0.93
Highest Educational Level	3.006	0.964
Name of Country/State currently working in	13.303	0.773

E. Relationship betweensociodemographic characteristics and coping of nurses

The findings also (Table 5) revealed no significant relationship (p-value=>0.05) between the sociodemographic characteristics and coping of nurses during the COVID-19 outbreak. The data discloses that the

variables on sociodemographic did not influence nurses' coping strategies when dealing with problems during the COVID-19 outbreak.

Table 5. Correlations of sociodemographic characteristics and coping of nurses

Variables	X^2	p-value
Age	7.164	0.847
Gender	1.216	0.544
Marital Status	6.243	0.182
Work Experience	7.302	0.837
Work Sector	1.7	0.427
Area of Assignment	19.477	0.363
Highest Educational Level	1.928	0.926
Name of Country/State currently working in	13.762	0.316

F. Relationship between emotional stress reaction and coping of nurses

The findings in (Table 6) show a statistically significant relationship(r-value=-0.417,p-value=0.000) between emotional stress reaction and the coping of nurses during the COVID-19 outbreak. The study shows that the emotional stress reactions of nurses are associated with their coping strategies.

Table 6. Correlations between an emotional stress reaction and coping of nurses

Variable	r-value	*p-value*
Emotional Stress Reaction VS. Coping Strategies Level	-0.417	0.000

G. Difference between the emotional stress reaction and coping of nurses

The data presented in Table 7 shows no statistically significant difference in the emotional stress reaction and coping strategies of nurses assigned in the specialized areas (F-test=0.061, p-value=0.858) and general wards (F-test=0.722, p-value=0.693). The study shows that most nurses in all areas identified in the study exhibit emotional reactions and coped with their stress or problems during the COVID-19 pandemic in similar ways.

Table 7. Difference between the emotional stress reaction and coping of nurses

Variables	Mean	F-test value	Computed t-value	p-value
Emotional Stress Reaction				
Nurses in special areas	2.60			
		0.061	-.180	0.858
Nurses in general wards	2.64			
Coping				
Nurses in special areas	1.91			
		0.722	0.399	0.693
Nurses in general wards	1.86			

IV. DISCUSSION

The COVID-19 pandemic has overwhelmingly influenced the nursing workforce. In this study, 76 nurses responded to the survey on emotional stress reaction and coping strategies while on clinical nursing care amidst pandemic. This descriptive comparative survey identified that majority of the respondents are relatively young to middle adults and predominantly female nurses. Single nurses constitute the highest frequency of responses, and most of them have been working from 4 to 9 years in the nursing service. There are more response nurses from government hospitals. This study operationally identified specialized areas as nurses assigned in the operating room, delivery room, NICU, ICU, emergency room, PICU, and dialysis unit. General wards, on the other hand, are nurses on the surgical and medical floors. Nurses who responded in the "Other" option of the area of the assignment constituted the general ward total population.

The findings indicate that nurses in the specialized areas demonstrated emotional stress reaction to being alert while on duty; the statement on being concerned was the general ward nurse's reaction during the COVID-19 pandemic because of their work-related exposure to the coronavirus. The study of Ghio et al. [9] found an increased level of anxiety, depression, PTSD, and high levels of burnout. A statistically significant association between burnout and insomnia, depression, anxiety, and post-traumatic symptoms. Shaukat et al. [11] identified physical and mental consequences in providing care to patients infected with coronavirus disease. The result of the study indicates that during the COVID-19 pandemic, health workers showed high levels of psychological

distress and that burnout is a predictor of sufferance. Over time, the emotional stress reaction can harm the human body and eventually result in fatigue and affect nurses' performance in the long run.

The coping strategies identified that nurses assigned in the specialized areas more likely agree with the statement, "When dealing with the problem, I often wait it out and see if it doesn't care of itself," and general ward nurses more likely agree with the statement, "When dealing with a problem, I often try to remember that the problem is not as serious as it seems." Natividad et al. [18] conducted a study on feelings, stress, and coping strategies showed that female nurses, married, with bachelor's degrees, and aged 25–34 years demonstrated higher coping during the pandemic. On the other hand, Filipino nurses assigned in the outpatient department and COVID-19 isolation ward expressed more negative feelings and stress but were coping better. The study concluded that religion, spiritual beliefs, and the presence of a support system were the coping strategies used by nurses to alleviate stress and negative feelings during the COVID-19 outbreak. Likewise, Rose et al. [19] on healthcare workers' emotions, perceived stressors, and coping mechanisms during the covid-19 concluded that camaraderie and teamwork reduce their level of stress. However, this study showed that items referring to humor, exercise, hobbies, or meditation to help them get through a tough time, making jokes, taking steps to take better care of themselves and their family for the future, changing habits, or staying closer touch with people they care was fairly demonstrated by the respondents.

The sociodemographic characteristics of the nurses did not have a significant relationship to the emotional stress reaction and coping of nurses during the COVID-19 pandemic. It is noteworthy that some studies found stress and coping of nurses directly influenced by selected profile variables. Ali et al. [13] found that most nurses experience stress because of fear that their friends and families will be infected. Young and less experienced nurses reported more stress levels compared to older, senior-level nurses. Conti et al.'s [14] study found that younger participants reported higher levels of somatization, depression, anxiety, and post-traumatic symptoms. Lenzo et al. [17] indicated that the variables on age and the ability to perceive contextual cues are predictors of anxiety. The profile on age, work experience, and suppressing emotional expression were predictors of stress.

The findings of studies have demonstrated that the emotional stress reaction of nurses is significantly correlated to their coping strategies when dealing with the problem. This study suggested a definite relationship of how individuals address their issues during this pandemic. The study provides additional support for some existing researches about stress and coping faced by nurses nowadays. Lenzo et al.'s [17] study further demonstrated that emotional expression was statistically significant to explain depression among healthcare workers. Zhang et al. [12] recommended that a psychological support strategy be organized and implemented to improve mental health among nurses during the COVID-19 pandemic. Cui et al. [23] conducted a study on the impact of COVID-19 on anxiety, stress, and coping styles of nurses in the emergency department and fever clinics concluded that measures are necessary to preserve the mental health of nurses.

Finally, this study showed no significant differences in the emotional stress reactions and coping of nurses according to the area of assignment. Existing studies have revealed the stress and coping of nurses in specialized nursing units and other nursing departments. LoGiudice and Bartos [15] conducted a study on the experiences of nurses working on various types of units such as ICU, medical-surgical unit, emergency department (adult and pediatric), critical care unit, telemetry unit, postanesthesia, care unit, cardiac care unit, maternity ward, surgery unit, hospice, or the float pool have expressed negative emotions, frustration, anxiety, and stress. Cui et al. [23] study further show that nurses in the emergency department and fever clinics had more mental health problems: female gender, fear of infection among family members, regretting being a nurse, less rest time, more night shifts, having children, lack of confidence in fighting transmission, not having emergency protection training, and negative professional attitude.

Limitations and Recommendations

The conduct of this study is not without limitations. The data was collected through a nonprobability snowball sampling that poses less percentage of responses. Not all nurses responded to the online questionnaire that leads to variations in the distribution of respondents according to the area of assignment. Thus, the authors recommend future studies of nurses with a larger sample of data assigned in specialized nursing areas and general wards related to an emotional stress reaction and coping strategies.

V. CONCLUSION

Nurses' sociodemographic characteristics have no significant bearing on the emotional stress reactions and coping strategies. The evidence from this study suggests that nurses react to the pandemic by being alert and more concerned. This study presented that nurses coped with the situation by waiting it out and trying to see if it doesn't take care of itself, and trying to remember the problem is not as serious as it seems. A significant relationship was revealed between the emotional stress reaction and coping of nurses during the COVID-19 outbreak. There is no significant difference between nurses assigned in the specialized nursing areas and general wards. The study further concluded that nurses in all areas most likely exhibit emotional stress reactions and cope with stress during the COVID-19 outbreak in similar ways. The study provides a theoretical underpinning that improves the psychological aspect and mental health of nurses. In this way, nurses will be able to meet standards of nursing care amidst the COVID-19 outbreak.

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