

## A comparative study to assess the level of stress and coping of staff nurses working in Covid Care Units in selected hospitals at Ernakulam District.

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**Abstract:** A Comparative descriptive design was undertaken to compare the level of stress and coping of staff nurses working in Covid Care Units in selected hospitals at Ernakulam District. The objectives were to assess the stress among the staff nurses working in Covid Care Units ,to determine the level of coping among the staff nurses working in Covid Care Units ,to compare the level of stress and coping among staff nurses working in Covid Care Units and also to find the association of stress among the staff nurses with selected demographic variables such as age, professional qualification, marital status, type of family, number of children, experience in current area and total work experience and also to find the association between the level of coping among staff nurses with the selected demographic variables.

**Methods:** The research approach adopted for this study was quantitative type and the research design was comparative descriptive design. This study was conducted among 25 staff nurses working in covid care units in selected hospitals at Ernakulam district based on inclusion criteria using non - probability convenient sampling technique. The data for the study was collected by modified five – point perceived stress scale and modified four- point coping scale. The data were analyzed and interpreted by descriptive and inferential statistics.

**Results:** Among the demographic variables, 84 %( 21) belonged to the age group of 20-30 yrs. , majority 72% (18) of the samples were Graduate Nurses. 60 % (15) of the samples were unmarried. 92 %( 23) belonged to nuclear family. As far as the number of children was considered, 76 % (19) did not have children. When the experience in current area ( Covid Care Units ) were taken into account, 36% (6) had 9 months of experience and 28% (12) had 11 months of experience and 32% (8) had a total work experience of 1 to 2 years.

When the level of stress was considered, 96 % (24) of the participants had moderate stress, only 4% (1 ) had low stress and none of them had high perceived stress.Regarding coping, about 80% (20) of participants had good coping, 20% (5) had excellent coping & none had moderate and poor coping level.

When the level of stress and coping strategies were compared, the calculated Karl Pearson's Correlation Coefficient value 'r' was –0.3 which showed that a weak negative correlation exist between stress and coping of staff nurses working in covid care units. The results of chi square analysis indicated that there was no significant association with any of the selected demographic variables with level of stress and coping.

**Interpretation and Conclusion:** Exploration of nurses's perceptions of stress during the pandemic provides important insight into the nature of nurses' experiences and potential measures that healthcare institutions can take to mitigate nurses' stress. Healthcare units should provide opportunities for nurses to discuss the stress they are experiencing, support one another, and make suggestions for workplace adaptations during this pandemic. Healthcare institutions and nurse managers need to recognize these sources of stress in order to identify potential organizational interventions to maintain nurses' health, safety, and well-being.

**Key words:** Assess, comparative, stress, coping, covid care units, staff nurses.

### 1. INTRODUCTION:

The novel coronavirus disease (COVID-19) pandemic has presented an unprecedented challenge to healthcare systems across the globe. The rapid spread of the disease in late 2019 and early 2020 caught many healthcare systems off guard and scrambling to provide intensive care unit beds, ventilators, and personal protective equipment (PPE) for both healthcare workers and patients. With the pandemic, nurses have confronted a perfect storm of conditions that threaten their physical health, mental well-being, and ability to perform their jobs. Media reports from many of the

world's COVID hotspots document extreme exhaustion, physical discomfort from long working hours with face masks and other PPE, fear of contagion, and emotional distress in nurses<sup>2</sup>. This combination of physical and emotional strain on an already stressed nursing workforce has become a hallmark of the COVID-19 pandemic. It is therefore critical to study nurses' experiences and well-being during and in the aftermath of the current crisis in order to identify risk groups for ill health and potential sources of organizational intervention<sup>3</sup>.

Nurses play essential roles in the fight against infectious diseases. During the COVID-19 pandemic, nurses faced higher risks of death than physicians in some countries. The pandemic caused not only morbidity and mortality but also psychological and social problems. High expectations, lack of time, skills, and social support may lead to occupational stress that, in turn, causes anxiety, post-traumatic stress disorder, distress, burnout, and other psychological problems.

Stress is a term in psychology and biology, first coined in the biological context in the 1930s, which has in more recent decades become commonly used in popular parlance. It refers to the consequence of the failure of an organism – human or animal – to respond appropriately to emotional or physical threats, whether actual or imagined. A cross-sectional survey was conducted to assess stress, burnout, and coping strategies of frontline nurses during the COVID-19 pandemic among 110 nurses from Zhongshan Hospital, Shanghai, who were deployed at COVID-19 units in Wuhan and Shanghai. The results showed that nurses in this study experienced considerable stress and the most frequently reported stressors were related to families. Nurses who were younger and those working longer shift-time tended to present higher burnout levels<sup>9</sup>.

A nationwide cross-sectional online study on the impact of COVID-19 pandemic in health care workers in reference with a variety of factors was conducted in India among 200 respondents. The results showed that a significant number of respondents were found to be suffering from acute stress (9.5%), depression (17%), and anxiety (19.5%) which they attributed to the negative professional and personal influence of this ongoing pandemic scenario<sup>5</sup>.

## **2. NEED FOR STUDY:**

Nursing is a rewarding and satisfying profession. But, at the same time, it can also be extremely stressful. Nurses in India, are overburdened as the nurse to patient ratio is low. They are responsible-along with other health care professionals-for the treatment, safety, and recovery of acutely or chronically ill, injured, health maintenance, treatment of life-threatening emergencies and medical and nursing research. Nurses not only assume the role of caregivers but are also administrators and supervisors of patients. These multiple work roles along with the outbreak of Covid 19 contribute to significant amount of occupation related stress amongst nursing staff<sup>12</sup>.

A cross-sectional descriptive study was conducted to assess the burnout and resilience among 120 frontline nurses in the emergency department of a tertiary care center in North India during COVID-19 pandemic. The samples were selected by simple random sampling method. The results showed that the nurses in the emergency department during pandemic experienced a moderate-to-severe level of burnout in emotional exhaustion and depersonalization but mild-to-moderate level of burnout in reduced personal accomplishment and showed a moderate to a high level of resilience<sup>10</sup>.

It is therefore critical to study nurses' experiences and well-being during the current crisis in order to identify risk groups for ill health and potential sources of organizational intervention.

## **3. OBJECTIVES:**

- To assess the stress among the staff nurses working in Covid Care Units in a selected hospital at Ernakulam district.
- To determine the level of coping among the staff nurses working in Covid Care Units in a selected hospital at Ernakulam district.
- To compare the level of stress and coping among staff nurses working in Covid Care Units in a selected hospital at Ernakulam district
- To associate stress among the staff nurses with selected demographic variables such as age, professional qualification, marital status, type of family, number of children, experience in current area and total work experience.
- To associate the level of coping among staff nurses with the selected demographic variables such as age, professional qualification, marital status, type of family, number of children, experience in current area and total work experience.

#### 4. HYPOTHESIS (At 0.05 level of significance)

- $H_1$  : There will be a significant association between the level of stress of staff nurses with their selected demographic variables such as age professional qualification, marital status, type of family, number of children, experience in current area and total work experience.
- $H_2$  : There will be a significant association between the level of coping of staff nurses with their selected demographic variables such as age professional qualification, marital status, type of family, number of children, experience in current area and total work experience.

#### 5. MATERIALS AND METHODS:

The research approach adopted for this study was quantitative type and the research design was comparative descriptive research design. This study was conducted in selected hospitals at Ernakulam, District, among 25 staff nurses working in covid care units. The main study was conducted after doing pilot study in another hospital. The samples were selected on the basis of inclusion criteria by using non probability convenient sampling technique. The investigators met the nurses working in Covid Care Units after their shift separately who were assembled in a room outside the Covid Care Unit. The investigators introduced themselves and developed rapport with the subjects. The investigators explained the purpose of the study and reassured that the data collected would be kept confidential. The objectives of the study were explained to the staff nurses and written informed consent was obtained. Each subject was given 45 minutes for completing the tool. Tool developed for the study consisted of a Modified five point Percieved stress scale by Cohen , Kamarck and Mermelstein and Modified four point coping scale by Hamby, Grych and Banyard for which permission was obtained from the authors. On the completion of 45 minutes, the tool was collected back by the researchers.

#### 6. ANALYSIS RESULTS:

The data was presented in the form of tables and figures.

### SECTION 1

#### Demographic data of the participants:

Table:1 - Distribution of demographic data of the participants

N = 25

Demographic Variables	Frequency	Percentage
<b>Age in years</b>		
20 - 30	21	84%
30 - 40	04	16%
40 - 50	0	0
50 and above	0	0
<b>Professional Qualification</b>		
GNM	04	%
B.Sc.Nsg.	18	72%
P.B.B.sC. Nsg.	03	12%
M.Sc. Nsg.	0	0
<b>Marital Status</b>		
Married	10	40%
Unmarried	15	60%
Divorced	0	0
Widowed	0	0

<b>Type of family</b>		
Nuclear	23	92%
Joint	02	08%
Extended	0	0
<b>Number of children</b>		
Zero	19	76%
01	04	16%
02	02	08%
03	0	0
More than 3	0	0
<b>Experience in Covid Care units</b>		
03 months	04	16%
06 months	09	36%
07 months	01	04%
08 months	02	08%
10 months	02	08%
12 months	07	28%
<b>Total Work Experience</b>		
Less than 1 year	05	20%
1 - 2 Years	08	32%
2 - 3 Years	05	20%
3 - 5 Years	03	12%
05 - 10 Years	03	12%
More than 10 Years	01	04%

From the above Table: 1, among the participants, 84 % ( 21) belonged to the age group of 20-30 yrs. , majority 72% (18) of the samples were Graduate Nurses. 60 % (15) of the samples were unmarried. 92 % ( 23) belonged to nuclear family. As far as the number of children was considered, 76 % (19) did not have children. When the experience in current area ( Covid Care Units ) were taken into account, 36% (6) had 9 months of experience and 28% (12) had 11 months of experience and 32% (8) had a total work experience of 1 to 2 years.

## SECTION II

### Stress level of the participants working in Covid Care Units

Table 2: Stress level of participants working in Covid Care Units

N=25

Level of stress	Frequency	Percentage
Low Stress	1	4%

Moderate Stress	24	96%
High Perceived Stress	0	0%

Table: 2, shows that, the level of stress of the samples was grouped into three categories, ie, low stress, moderate stress, and high perceived stress. 96 % (24) of the participants had moderate stress, only 4% (1 ) had low stress and none of them had high perceived stress.

### SECTION III

#### Coping level of the participants working in Covid Care Units

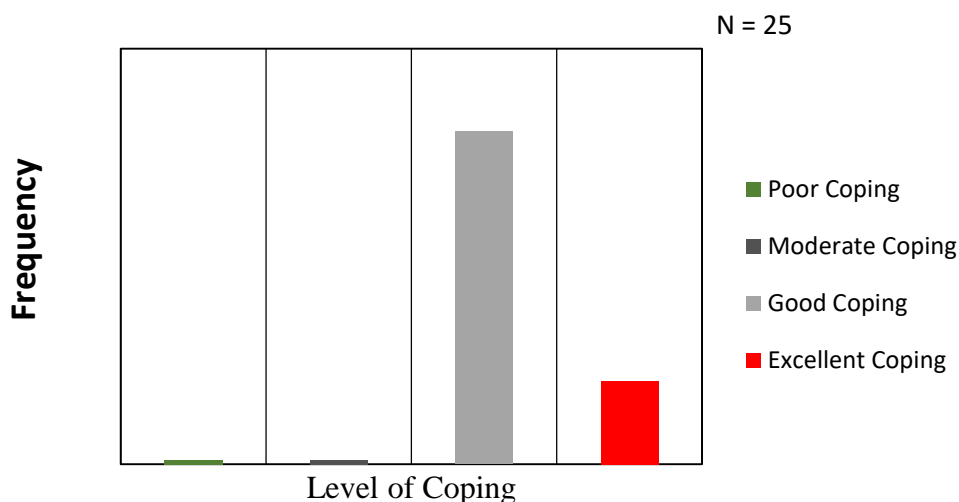


Fig.1 Coping level of the participants working in Covid Care Units

From Figure 1: The level of coping was grouped under four categories, poor coping, and moderate coping and good coping and excellent coping. About 80% (20) of participants had good coping, 20% (5) had excellent coping & none had moderate and poor coping level.

### SECTION IV

#### Comparison of stress and coping among participants working in Covid Care Units

**Table: 3 - Comparison of stress and coping among participants working in Covid Care Units**  
 N = 25

Stress		Coping		Correlation Coefficient
Mean	SD	Mean	SD	
19.08	4.18	34.16	4.8	- 0.3

The above table :3 depicts that there is a significant difference between the mean of level of stress and coping ie,19.08 and 34.16 of but, there is a less significant difference between the standard deviation of level of stress and coping strategies of nurses working in covid care units i.e, 4.18 and 4.8 respectively. The calculated Karl Pearson's

Correlation Coefficient value 'r' was – 0.3 which showed that a weak negative correlation exist between stress and coping of staff nurses working in covid care units.

### SECTION V

Association between level of stress and coping with selected demographic variables:

Table : 4 - Association between level of stress and coping with selected demographic variables

N = 25

Demographic Variables	Frequency	Percentage	Chi square Value X <sup>2</sup>
<b>Age in years</b>			
20 - 30	21	84%	0.198396
30 - 40	04	16%	
40 - 50	0	0	
50 and above	0	0	
<b>Professional Qualification</b>			
GNM	04	%	5.46875
B.Sc.Nsg.	18	72%	
P.B.B.sC. Nsg.	03	12%	
M.Sc. Nsg.	0	0	
<b>Marital Status</b>			
Married	10	40%	0.6937
Unmarried	15	60%	
Divorced	0	0	
Widowed	0	0	
<b>Type of family</b>			
Nuclear	23	92%	0.090569
Joint	02	08%	
Extended	0	0	
<b>Number of children</b>			
Zero	19	76%	0.328927
01	04	16%	
02	02	08%	
03	0	0	
More than 3	0	0	
<b>Experience in Covid Care units</b>			
03 months	04	16%	1.851746
06 months	09	36%	
07 months	01	04%	
08 months	02	08%	
10 months	02	08%	
12 months	07	28%	
<b>Total Work Experience</b>			
Less than 1 year	05	20%	4.1665
1 - 2 Years	08	32%	
2 - 3 Years	05	20%	
3 - 5 Years	03	12%	
05 - 10 Years	03	12%	
More than 10 Years	01	04%	

From the above table: 4, there was no significant association between level of stress of samples working in Covid Care units with their selected demographic variables such as age, professional qualification, marital status, and type of family, number of children, experience in current area and total work experience.

**Table : 5 - Association between level of coping with selected demographic variables**

N = 25

Demographic Variables	Frequency	Percentage	Chi square Value $\chi^2$
<b>Age in years</b>			
20 - 30	21	84%	0.07438
30 - 40	04	16%	
40 - 50	0	0	
50 and above	0	0	
<b>Marital Status</b>	10	40%	0.6937
Married	15	60%	
Unmarried	0	0	
Divorced Widowed	0	0	
<b>Type of family</b>			1.7083
Nuclear	23	92%	
Joint Extended	02 0	08% 0	
<b>Number of children</b>			2.13815
Zero	19	76%	
01	04	16%	
02	02	08%	
03 More than 3	0 0	0 0	
<b>Experience in Covid Care units</b>			1.6612
03 months	04	16%	
06 months	09	36%	
07 months	01	04%	
08 months	02	08%	
10 months 12 months	02 07	08% 28%	
<b>Total Work Experience</b>			11.9
Less than 1 year	05	20%	
1 - 2 Years	08	32%	
2 - 3 Years	05	20%	
3 - 5 Years	03	12%	
05 - 10 Years More than 10 Years	03 01	12% 04%	

From the above table:5, there was no significant association between level of coping of samples working in Covid Care units with their selected demographic variables such as age, professional qualification, marital status, type of family, number of children, experience in current area and total work experience.

## 7. RECOMMENDATIONS:

It would be useful to have more research that extends the sampling of other non-medical and medical staff in Hospital

The use of wider coverage of sample study will enable us to evaluate the extent level of the issue on job stress and coping mechanisms among staff nurses working in Covid care units in Kerala.

This study should cover other parts of the Country so that generalization on the issue of job stress and coping mechanisms among nurses working in Covid care units can assertively be made.

It may also be beneficial to conduct research on nurses in Government Health Services so that comparison and differences between both Government and private health services can be assessed.

## 8. CONCLUSION:

Exploration of nurses' perceptions of stress during the pandemic provides important insight into the nature of nurses' experiences and potential measures that healthcare institutions can take to mitigate nurses' stress. Healthcare units should provide opportunities for nurses to discuss the stress they are experiencing, support one another, and make suggestions for workplace adaptations during this pandemic. Healthcare institutions and nurse managers need to recognize these sources of stress in order to identify potential organizational interventions to maintain nurses' health, safety, and well-being.

## REFERENCES:

1. Phan LT, Nguyen TV, Luong QC, Nguyen TV, Nguyen HT, Le HQ, et al. Importation and human-to-human transmission of a novel coronavirus in Vietnam. *New Engl J Med.* (2020) 382:872–4. doi: 10.1056/NEJMc2001272
2. Paules CI, Marston HD, Fauci AS. Coronavirus infections - more than just the common cold. *JAMA.* (2020) 323:707–8. doi: 10.1001/jama.2020.0757
3. Morens DM, Daszak P, Taubenberger JK. Escaping pandora's box - another novel coronavirus. *New Engl J Med.* (2020) 382:1293–5. doi: 10.1056/NEJMp2002106
4. Fitzgerald G, Aitken P, Shaban RZ, Patrick J, Arbob P, McCarthy S, et al. Pandemic (H1N1 Influenza 2009 and Australian emergency departments: implications for policy, practice and pandemic preparedness. *Emerg Med Australas.* (2012) 24:159–65. doi: 10.1111/j.1742-6723.2011.01519.x
5. Tam CW, Pang EP, Lam LC, Chiu HF. Severe acute respiratory syndrome (SARS) in Hong Kong in 2003: stress and psychological impact among frontline healthcare workers. *Psychol Med.* (2004) 34:1197–204. doi: 10.1017/S0033291704002247
6. Wu P, Fang Y, Guan Z, Fan B, Kong J, Yao Z, et al. The psychological impact of the SARS epidemic on hospital employees in China: exposure, risk perception, and altruistic acceptance of risk. *Can J Psychiat.* (2009) 54:302–11. doi: 10.1177/070674370905400504
7. Zhang C, Yang L, Liu S, Ma S, Wang Y, Cai Z, et al. Survey of insomnia and related social psychological factors among medical staff involved in the 2019 novel coronavirus disease outbreak. *Front Psychiatry.* (2020) 11:306. doi: 10.3389/fpsy.2020.00306
8. Zhou Y, Yang Y, Shi T, Song Y, Zhou Y, Zhang Z, et al. Prevalence and demographic correlates of poor sleep quality among frontline health professionals in Liaoning province, China during the COVID-19 outbreak. *Front Psychiatry.* (2020) 11:520. doi: 10.3389/fpsy.2020.00520
9. Zhu J, Sun L, Zhang L, Wang H, Fan A, Yang B, et al. Prevalence and influencing factors of anxiety and depression symptoms in the first-line medical staff fighting against COVID-19 in Gansu. *Front Psychiatry.* (2020) 11:386. doi: 10.2139/ssrn.3550054
10. Shen X, Zou X, Zhong X, Yan J, Li L. Psychological stress of ICU nurses in the time of COVID-19. *Crit Care.* (2020) 24:200. doi: 10.1186/s13054-020-02926-2
11. Tolomiczenko GS, Kahan M, Ricci M, Strathern L, Jeney C, Patterson K, et al. SARS: coping with the impact at a community hospital. *J Adv Nurs.* (2005) 50:101–10. doi: 10.1111/j.1365-2648.2005.03366.x
12. Geoffroy PA, Le Goanvic V, Sabbagh O, Richoux C, Dufayet G, Lejoyeux M. Psychological support system for hospital workers during the Covid-19 outbreak: rapid design and implementation of the Covid-Psy hotline. *Front Psychiatry.* (2020) 11:511. doi: 10.3389/fpsy.2020.00511
13. Figueroa CA, Aguilera A. The need for a mental health technology revolution in the COVID-19 pandemic. *Front Psychiatry.* (2020) 11:523. doi: 10.3389/fpsy.2020.00523
14. Gómez-Urquiza JL, De la Fuente-Solana EI, Albendín-García L, Vargas-Pecino C, Ortega-Campos EM, Cañadas-De la Fuente GA. Prevalence of burnout syndrome in emergency nurses: a meta-analysis. *Crit Care Nurse.* (2017) 37:e1–9. doi: 10.4037/ccn2017508