

A Descriptive Study to Assess the Stress and Coping Strategies Among Nurses Working in Covid- 19 Ward in Selected Hospitals of Navi Mumbai

Prof. N. Manimegalai. M.Sc (N), Vice Principal, Swami Vivekananda College of Nursing, Rajalin Sharifa, Terna Nursing College, Prof. C. Subashini, Dharan Nursing College.

Abstract:- Background of the study: Working during the COVID-19 pandemic is a particular challenge for nurses because, while performing their daily routines, they are exposed to physical and social consequences of the SARS-CoV-2 virus, which is accompanied by intensified stress. In COVID-19 pandemic nurses contributed by doing extra shifts, working in adverse and unfavorable conditions which affected their physical and mental status and to cope with that what strategies do they use that has been assessed. **Objective of the Study:** To assess the stress, coping strategies among nurses working in COVID-19 wards and its association with demographic variables. **Materials and method:** A total of 60 nurses working in COVID-19 wards were selected by using non-probability convenient sampling technique. The tool used were modified work stress scale and modified brief cope scale. **Results:** Among selected staff nurses (n=60) 86.7% (n=52) nurses have mild stress, 13.3% (n=8) nurses have moderate stress and 0.0% nurses have severe stress and among selected staff nurses (n=60) 26.7% (n=16) nurses have low coping level, 61.7% (n=37) nurses have moderate coping level and 11.7% (n=7) nurses have high coping level. There is no statistical significant association between demographic variable and stress level of staff nurses but there is association between some of the demographic variables and coping level of nurses. **Conclusion:** Majority of nurses had mild stress and moderate coping. Some major demographic variables also had the association with coping level of nurses.

Keywords:- Stress, Coping Mechanism, Stress Scale and Modified Brief Cope Scale, Staff Nurse.

I. INTRODUCTION

➤ *“Set peace of mind as your highest goal, and organize your life around it.*

Nursing has always been recognized as a stressful Profession, but this cannot be explained merely on the basis of increased workload. The COVID-19 pandemic has been a global challenge for healthcare workers, among whom nurses, undeniably, constitute the biggest professional group.

The corona virus disease 2019 (COVID-19) pandemic has resulted in >890,000 cases and >45,000 deaths worldwide, including 239,279 cases and 5,443

deaths in the United States (1,2).

By March 11, 2020, COVID-19 was declared a pandemic by the World Health Organization (WHO), with over 120,000 cases and 4300 deaths reported around the world.² WHO reports that as of October 22, 2020, there are over 40 million confirmed cases worldwide, with over 1 million deaths.

Data from 149,760 laboratory-confirmed COVID-19 cases in the United States occurring during February 12-April 2, 2020 were analyzed. Among 149,082 (99.6%) reported cases for which age was known, 2,572 (1.7%) were among children aged <18 years. Data were available for a small proportion of patients on many important variables, including symptoms (9.4%), underlying conditions (13%), and hospitalization status (33%).

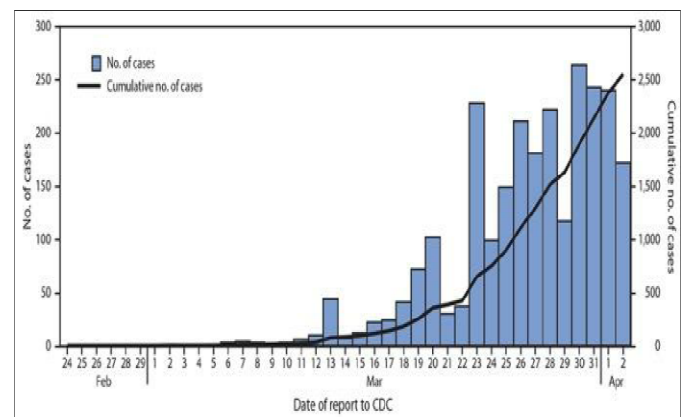


Fig 1: Cumulative Number of Cases in February To April 2020

A scoping review seeking to estimate a global number of healthcare workers (HCW) infected or deceased due to the pandemic found 152,888 infections and 1413 deaths reported. WHO cites additional hazards for HCWs during this time such as higher workload, psychological distress, fatigue, occupational burnout, and physical and psychological violence.

Working in pandemic conditions is a significant challenge for nurses because, while performing their daily routines, they are particularly exposed to the physical and social consequences of the SARS-CoV-2 virus, which is accompanied by intensified everyday stress. It is difficult for

nurses to find themselves in this new reality, taking into account the speed with which the disease is spreading, an insufficient time to prepare for a record number of seriously ill patients, the high mortality rate, everyday work in personal protective equipment, unpredictability of events, loss of control, sense of helplessness, and the fear accompanying everyday work routines. These are just some of the reasons why nurses' work is extremely vulnerable to stress and its effects during the COVID-19 pandemic.

COVID-19 has not only had an impact on staff nurse emotions, but their coping strategies too have undergone a change. Coping is defined as the thoughts and actions that individuals use to deal with stressful events. Research has identified two general coping strategies: one is problem-focused coping where the purpose is to solve the problem or take action to change the status quo; and the other is emotion-focused coping, which aims to reduce the emotional distress associated with stressful situations. Research on identifying differences in nurses' work in the face of such enormous stress, such as the COVID-19 pandemic, seems to be of vital importance in order to develop diverse and highly effective intervention strategies.

According to Indus Scrolls press, published on 12 May 2020 found that, among 1,257 healthcare workers working with Covid-19 patients in China, 71.5% reported stress and 60% of them had less coping strategies over covid 19 pandemic.

ALL nurses were frustrate irritable due extra shifts work load and with PPE kit, travelling issues, risk of infection to family, dehydration, payment issues etc this all issues they were facing during their duties. Based on this, the purpose of this study was to explore the current status and relationship of stress and coping strategies of nurses at all levels of hospital.

Research on identifying differences in nurses' work in the face of such enormous stress, such as the COVID-19 pandemic, seems to be of vital importance in order to develop diverse and highly effective intervention strategies.

➤ *Need For Study*

The first case of Corona virus disease 2019 in India was reported in the state of Kerala on January 30, 2020. Nurses as front line workers encountered greater challenges in caring patients with COVID 19 and lock down restrictions.

Major stress sources included working in an isolated environment, changing one's way of life, concerns about personal protective equipment, having inadequate nurses in the unit, fear of being infected, physical and emotional exhaustion¹. The fear of being infected, fear of infecting family members, and the discomfort caused by protective equipment were the key sources of stress among frontline healthcare workers caring for COVID-19 patients².

Survey done in Wuhan reveals that, among 994 medical and nursing staff, 36.9% had sub-threshold mental health disturbances, 34.4% had mild disturbances, 22.4% had

moderate disturbances, and 6.2% had severe disturbance in the immediate aftermath of the viral epidemic.³

As a member of the COVID team nurses, the investigator noticed that nursing staff were under a lot of stress due to their work load, COVID procedures, and the fear of being infected and spreading them to their family members. As a result, this cross-sectional descriptive research was conducted with the following objectives to assess the psychological impact of the COVID 19 pandemic among nursing personnel involved in caring for COVID 19 patients.

➤ *Objectives*

1. To determine the level of stress and coping strategies among nurses working in COVID- 19 ward in selected hospital of Navi Mumbai.
2. To find an association between selected demographic variables with stress and coping strategies among nurses working in COVID- 19 ward in selected hospital of Navi Mumbai.

II. MATERIALS AND METHODS

➤ *Design and sampling*

A descriptive study design was used in this study. Staff nurses caring for COVID 19 patients in the Terna specialty hospital and research center in south India with experience of caring for patients with COVID 19 for at least one week were included in the study. There were 60 nurses in all, selected by Non Probability convenient sampling technique from all three shifts. The participants gave their informed consent. They were given a self-administered questionnaire and rating scale to complete.

III. DATA COLLECTION INSTRUMENT

The researcher adopted a practical approach for the development of tool prior to preparation of tool. This Study the Tool Consists of,

Section A: Demographic data which includes Age in years, Gender, Religion, Type of families, Place of residence, Mode of travel, Marital status, Year experience, Income, Distance of workplace, Supporting system, Training program. Totally it consists of 12 items.

Section B: Modified stress scale to assess the level of stress which consist of 1-20 items and scoring scale up to 1- 5 with division of scores based on severity of stress. The participants have responded to the statements as per the severity of the stress factor (0=No stress; 0-37= Mild; 38-59=Moderate; 60-100=Severe). The content validity index score of this section was 0.98.

Section C: Modified brief cope scale to assess the level of coping strategies which consist of 1-20 items and scoring scale up to 5 with division of scores based on coping to stress. (Low level coping :1-57, Moderate level coping: 58-79, High level coping:80-100). The content validity index score of this section was 0.96.

➤ *Data Collection Procedure:*

A formal written permission was secured from the head of the institution from Terna specialty hospital and research center, Navi Mumbai. The data was possessed from February 2022, from staff Nurses who fulfilled sample inclusion criteria. Before conducting the study, the researcher visited the selected hospital prior to the data gathering process and obtained permission from the authorities to conduct the study. A written informed consent obtained from them after detailed description and ensuring confidentiality. The questionnaires were administered to the group for test: instructions given, clarification was provided whenever they had doubt. They were given one complete hour to complete the questionnaire. The score was calculated and considered as test score. The score obtained was calculated and considered as test score. This process continued until the researcher obtained

required sample size. Data collection process was completed. All the participants cooperated well in the test. The data collection process was terminated by thanking the participants and supervisors for their cooperation. Descriptive and inferential statistics was done to compute the results. The descriptive data included frequencies and means of perceived stressor scale, chi-square was used for association.

➤ *Data analysis:*

The data was analyzed using SPSS 23.0 statistics. Descriptive statistics were used to analyze the demographic distribution, stress, and coping factors using frequency, proportions (percent), mean, and standard deviations. To see whether there was an association between stress and coping impact with demographic variables, the Chi square test was used.

IV. RESULTS

Part A: Demographic Characteristics of the staff Nurses:

Table 1: Distribution of subjects based on demographic variables NO: 60

S.no	Demographic variables	variables	percentage
1	Age group (yrs)	20 – 34	66.7
		35 – 44	26.7
		45 – 54	6.7
2	Gender	Female	85.0
		Male	15.0
3	Education	Diploma	51.7
		UG	33.3
		PG	15.0
		Others	0.0
4	Marital status	Married	42
		Unmarried	58
5	Year of experience	1 month – 1 yr	33.3
		1yr - 2 yrs	21.7
		2yrs – 4yrs	45.0
6	Income (Rs)	10000 – 20000	46.7
		21000 – 29000	36.7
		30000 and above	16.7
7	Types of Family	Joint	18.3
		Nuclear	81.7
8	Types of Residence	Home	70.0
		Hostel	30.0
9	Mode of Travel	By walk	50.0
		Train	48.3
		Institutional Vehicle	1.7
		Other	0.0
10	Distance of work place	1km – 2kms	43.3
		2.1kms – 4kms	16.7
		>4kms	40.0
11	Supporting system during stress	Friend	45.0
		Husband	26.7
		Relatives	28.3
12	Training program for stress reduction	Yoga	10.0
		Meditation	15.0
		Others	75.0

The data about demographic variables of staff nurses regarding age group depicts that 66.7% nurses belongs to age group of 20-34 years, 85% staff nurses are belongs to female, 51.7% staff nurses has done diploma, 58.3% of nurses were married.45% of nurses are experienced for 2-4 years. 46.7% (28) of nurse monthly income falls in the range of 10000-20000Rs, 81.7% staff nurses belongs to nuclear family.70% staff nurses reside in their home, Half of the staff nurses (50%) come to hospital by walking, Distance of workplace for 43.3% nurses is 1-2 KMs, 45% staff nurses have their friend ,As a training program for stress reduction 75% nurses uses other resources.

A qualitative study done by **Galehdar Nasrin etal (2020)**also supports this finding that nursing staff expressed significant inconvenience in using the full attire of PPE recommended to protect them from COVID 19 and fear and anxiety of transmitting infection from the work area to their family environment always burdened them. Theyexpressed concern about having to wear the full gown with other protective gears for the whole shift whichplaced difficulties in meeting their basic needs such as eating, drinking, and even going to rest room.

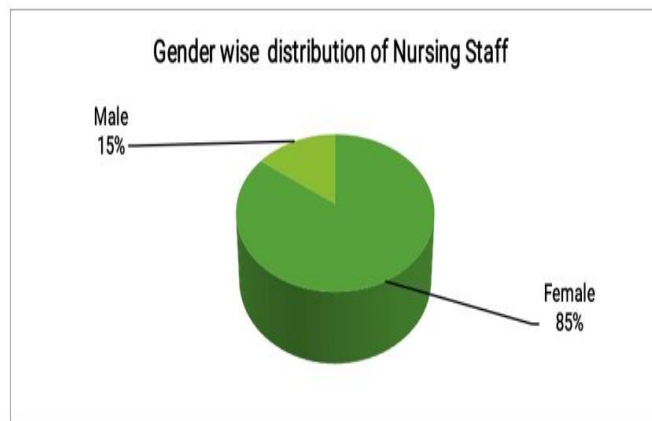


Fig 4: Frequency distribution of gender of Nursing Staff

Table- 2: Bar diagram showing Categorical stress level among nurses

Level	Stress level						
	Mild	%	Moderate	%	Severe	%	Total
Stress Level	52	86.7	8	13.3	0	0.0	60

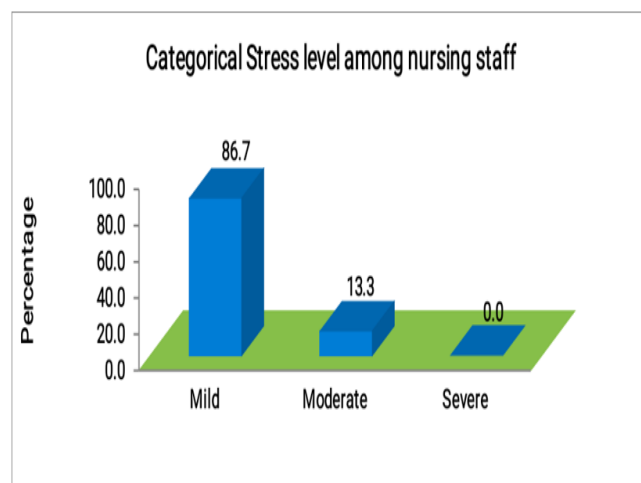


Fig 5: Frequency distribution of stress level among nursing staff

Reveals that 86.7% (52) nurses have mild stress, 13.3% (8) nurses have moderate stress and 0% nurses have severe stress.

Table-3: Bar diagram showing Categorical coping level among nursing staff.

Coping Level	Coping Level						
	Low	%	Moderate	%	High	%	Total
Coping Level	16	26.7	37	61.7	7	11.7	60

Bar diagram showing Categorical coping level among nursing staff shows that 26.7% (16) have low coping level, 61.7% (37) have moderate coping level and 11.7% (7) have high coping level.

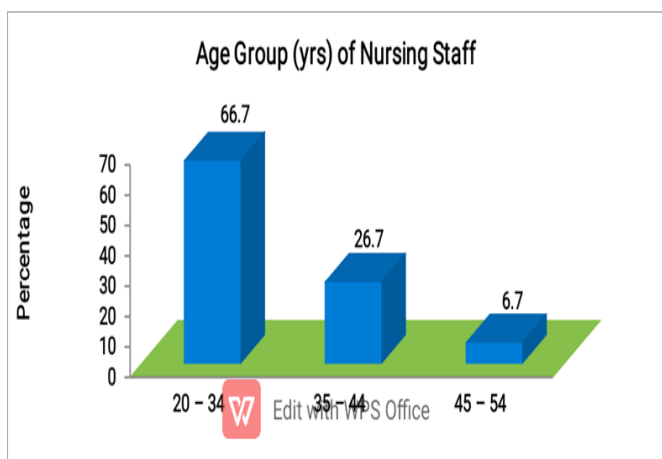


Fig 2 Frequency distribution of Age group of Nursing Staff

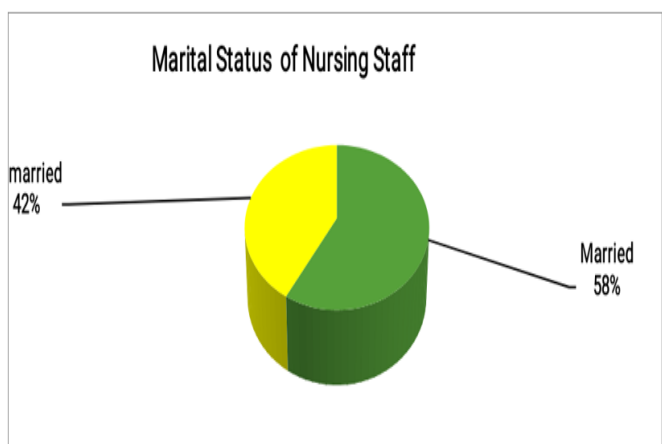


Fig 3: Frequency distribution of marital status of Nursing Staff

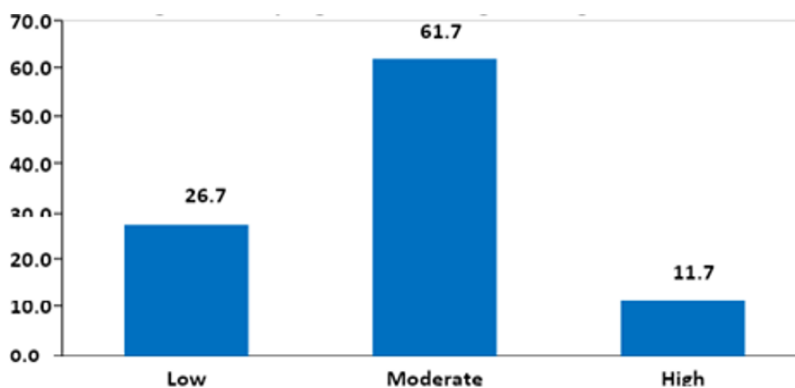


Fig 6: Frequency distribution of coping level among nursing staff

Table 4: Association of the level of stress among nurses working in covid-19 ward with demographic variables

Demographic Variables	Stress Level			Total	Chi square test	P-Value	Significant at 5% level
	Mild (0 – 59)	Moderate (60 – 89)	Severe (90 – 100)				
Age group (yrs)							
20 – 34	33	7	0	40	1.911	0.385	Non significant
35 – 44	15	1	0	16			
45 – 54	4	0	0	4			
Gender							
Female	45	6	0	51	0.724	0.395	Non significant
Male	7	2	0	9			
Education							
Diploma	26	5	0	31	1.642	0.440	Non significant
UG	17	3	0	20			
PG	9	0	0	9			
Others	0	0	0	0			
Marital Status							
Married	30	5	0	35	0.066	0.797	Non significant
Unmarried	22	3	0	25			
Year of experience							
1 month – 1 yr	18	2	0	20	0.291	0.865	Non significant
1yr - 2 yrs	11	2	0	13			
2yrs – 4yrs	23	4	0	27			
Income (Rs)							
10000 – 20000	24	4	0	28	2.008	0.366	Non significant
21000 – 29000	18	4	0	22			
30000 and above	10	0	0	10			
Types of Family							
Joint	10	1	0	11	0.210	0.647	Non significant
Nuclear	42	7	0	49			
Types of Residence							
Home	38	4	0	42	1.758	0.185	Non significant
Hostel	14	4	0	18			
Mode of Travel							
By walk	26	4	0	30	0.159	0.924	Non significant
Train	25	4	0	29			
Institutional Vehicle	1	0	0	1			
Other	0	0	0	0			
Distance of work place							
1km – 2kms	23	3	0	26	0.472	0.790	Non

2.1kms – 4kms	8	2	0	10			significant
>4kms	21	3	0	24			
Supporting system during stress							
Friend	22	5	0	27	3.650	0.161	Non significant
Husband	13	3	0	16			
Relatives	17	0	0	17			
Training program for stress reduction							
Yoga	4	2	0	6	3.462	0.177	Non significant
Meditation	9	0	0	9			

**Statistically Significant at 5% level i.e., P<0.05.*

Association of stress level among nurses providing care to the COVID-19 patients in COVID ward with selected demographic variable, based on chi square test the calculated value for association which is statistically insignificant at 5% level i.e. P<0.05. hence we can conclude that there is no association between stress level and age group, Gender, Education, Marital Status, Year of experience, Income, Type of family, Type of family, Type of Residence, Mode of Travel, Residence, Distance of work place, Supporting system during stress, Training program for stress reduction.

Table 5: Association of the level of coping among nurses working in covid-19 ward with demographic variables

Demographic Variables	Coping Level			Total	Chi square test	P-Value	Significant at 5% level
	Low (0 – 57)	Moderate (58 – 79)	High (80 -100)				
Age group (yrs)							
20 – 34	12	26	2	40	17.482*	0.002	Significance
35 – 44	4	10	2	16			
45 – 54	0	1	2	4			
Gender							
Female	13	31	7	51	1.455	0.483	Non Significance
Male	3	6	0	9			
Education							
Diploma	12	18	1	31	9.574*	0.048	Non Significance
UG	3	14	3	20			
PG	1	5	3	9			
Marital Status							
Married	12	18	5	35	3.750	0.153	Non Significance
Unmarried	4	19	2	25			
Year of experience							
1 month – 1 yr	6	14	0	20	5.134	0.274	Non Significance
1yr - 2 yrs	2	9	2	13			
2yrs – 4yrs	8	14	5	27			
Income (Rs)							
10000 – 20000	7	19	2	28	4.520	0.340	Non Significance
21000 – 29000	6	14	2	22			
30000 and above	3	4	3	10			
Types of Family							
Joint	6	5	0	11	6.071*	0.048	Significance
Nuclear	10	32	7	49			
Type of Residence							
Home	13	23	6	42	2.870	0.238	Non Significance
Hostel	3	14	1	18			
Mode of Travel							
By walk	11	18	1	30	6.538	0.163	Non Significance
Train	5	18	6	29			
Institutional Vehicle	0	1	0	1			
Other	0	0	0	0			
Distance of work place							

<i>1km – 2kms</i>	7	18	1	26	3.647	0.456	Non Significance
<i>2.1kms – 4kms</i>	3	6	1	10			
<i>>4kms</i>	6	13	5	24			
Supporting system during stress							
<i>Friend</i>	3	21	3	27	11.767*	0.019	Significance
<i>Husband</i>	8	8	0	16			
<i>Relatives</i>	5	8	4	17			

***Statistically Significant at 5% level i.e., $P < 0.05$.**

Association of coping level among nurses providing care to the COVID-19 in COVID ward with selected demographic variable, based on chi square test the calculated value for association which is statistically significant at 5% level i.e. $P < 0.05$. Hence we can conclude that there is association between coping level and age group, Type of family, supporting system during stress.

Association of coping level among nurses providing care to the COVID-19 patients in COVID ward with selected variable, based on chi square test the calculated value for association which is statistically insignificant at 5% level i.e. $P < 0.05$. hence we can conclude that there is no association between coping level and Gender, Education, Marital Status, Year of experience, Income, Type of family, Type of Residence, Mode of Travel, Residence, Distance of work place, Training program for stress reduction.

V. DISCUSSION

➤ Findings in relation to demographic data

The data about demographic variables of staff nurses regarding age group depicts 66.7% nurses belongs to age group of 20-34 years, In gender wise distribution 85% staff nurses are female, 51.7% staff nurses has done diploma, 58.3% nurses among selected sample is married, 33.3% nurses have experience of 1 year, The monthly income of 46.7% (28) nurse falls in the range of 10000-20000Rs, 81.7% staff nurses have nuclear family, 70% staff nurses resides in their home, Half of the staff nurses (50%) come to hospital by walking, Distance of workplace for 43.3% nurses is 1-2 KMs. This findings were highlighted with the study conducted by Clarke and Ruffin CL 2019, who found the 85% of staff Nurse are female and 58% are married.

➤ Findings in relation to the level of stress and coping among nurses providing care to COVID-19 patients in COVID-19 ward

In present study it was found that 86.7% (52) nurses have Moderate stress and 61.7% (37) have moderate coping level. This was supported by the study done by Sheu et al on stress levels and coping behavior of which revealed that the level of stress in staff nurses was moderate stress level. The above findings of the study are compatible with the findings of Carwel et al. they assessed the stress levels and coping behavior of staff nurses and found the most common coping behavior of the nurses was to stay optimistic, followed by transference and problem solving.

➤ Findings in relation to the Association of the level of stress and coping among nurses working in covid-19 ward with demographic variables

In present study it was found that there is no association between stress level and age group, Gender, Education, Marital Status, Year of experience, Income, Type of family, Type of family, Type of Residence, Mode of Travel, Residence, Distance of work place, Supporting system during stress, Training program for stress reduction . And also found there is association between coping level and age group, Type of family, supporting system during stress. The findings were persistent with the report of Rocha - Singh, I. A. (2019) which denote that there is association between stress and coping level of staff nurses with selected demographic variable of age and type of family.

VI. CONCLUSION

COVID-19 pandemic has been a stressful situation for the nursing profession. Nurses managed to maintain their mental and emotional health. In this study, researchers assessed the stress level among nurses in which 86.7% (n=52) nurses have mild stress, 13.3% (n=8) have moderate stress and none of them have severe stress. Also assessed the coping level among selected staff nurses (n=60) in which 26.7% (16) nurses have low coping level, 61.7% (37) nurses have moderate coping level and 11.7% (7) nurses have high coping level. Among the demographic variables there is significant association between age group and coping level, having Chi square test value 17.482, P value =0.002. Also between education and coping level, having Chi square test value 9.574, P value =0.048, types of family and coping level, Chi square test value 6.071, P value =0.048. And between support system during stress and coping level, Chi square test value 11.767, P value=0.019.

RECOMMENDATION ON THE STUDY

On the basis of the present study the following recommendations can be made:-

1. A comparative study can be done on the stress among nurses working in COVID-19 ward and general ward.
2. A study can be done to assess the effectiveness of a particular coping strategy on stress among nurses.
3. An experimental study can be done to assess the newer coping strategies on nurses working in COVID-19 ward.

4. A similar study can be replicated in a setting of bigger sample size to generalize the result.

REFERENCES

- [1]. Dr. Smita shine, Indus scrolls, COVID-19: Stress levels high among nurses in India. May 12 2020.
- [2]. Hendy, Abdelaziz et al. "Predictive factors affecting stress among nurses providing care at COVID-19 isolation hospitals at Egypt." *Nursing open*, vol. 8, 1 498–505. 11 Oct. 2020, doi:10.1002/nop2.652
- [3]. Zheng, Ronghao et al. "Prevalence and associated factors of depression, anxiety, and stress among Hubei pediatric nurses during COVID-19 pandemic." *Comprehensive psychiatry* vol. 104 (2021): 152217. doi:10.1016/j.comppsy.2020.152217
- [4]. Chatterjee, Seshadri Sekhar et al. "Stress, Sleep and Psychological Impact in Healthcare Workers During the Early Phase of COVID-19 in India: A Factor Analysis." *Frontiers in psychology* vol. 12 611314. 25 Feb. 2021, doi:10.3389/fpsyg.2021.611314
- [5]. Park, Alayna & Velez, Clarissa & Kannan, Kamini & Chorpita, Bruce. (2020). Stress, functioning, and coping during the COVID-19 pandemic: Results from an online convenience sample.
- [6]. Hendy, Abdelaziz et al. "Predictive factors affecting stress among nurses providing care at COVID-19 isolation hospitals at Egypt." *Nursing open*, vol. 8, 1 498–505. 11 Oct. 2020, doi:10.1002/nop2.652
- [7]. Gupta, Anoop & Sahoo, Swapnajeet & Mehra, Aseem & Grover, Sandeep. (2020). Psychological impact of 'Lockdown' due to COVID-19 pandemic in Nepal: An Online Survey. *Asian Journal of Psychiatry*. 54. 102243. doi:10.1016/j.ajp.2020.102243
- [8]. Ali H, Cole A, Ahmed A, Hamasha S, Panos G. Major Stressors and Coping Strategies of Frontline Nursing Staff During the Outbreak of Coronavirus Disease 2020 (COVID-19) in Alabama. *J Multidiscip Healthc*. 2020;13:2057-2068. Published 2020 Dec 31.
- [9]. Zheng, Ronghao et al. "Prevalence and associated factors of depression, anxiety, and stress among Hubei pediatric nurses during COVID-19 pandemic." *Comprehensive psychiatry* vol. 104 (2021): 152217. doi:10.1016/j.comppsy.2020.152217.
- [10]. Panse SN, Parikh DD, Santre MS, Wadgaonkar GP, Gholap SD, Raidurg KA, More JB, Karad AV, Meshram NS, Sikchi RS. Psychological impact and coping strategies in health-care workers during the coronavirus disease 2019 pandemic at a dedicated coronavirus disease 2019 hospital: A cross-sectional study. *Indian J Soc Psychiatry [serial online]* 2021 [cited 2022 Jan 17];37:98-104.