Original Research Paper

Nursing

"LEVEL OF STRESS AMID COVID-19 PANDEMIC AMONG STAFF NURSES WORKING IN ICU IN SELECTED HOSPITALS OF KAMRUP (M) ASSAM: A DESCRIPTIVE STUDY"

Bandana Devi	M.Sc. Nursing 2nd year (Medical Surgical Nursing specialty) Asian Institute of Nursing Education, Guwahati, Assam, India.
Mrs. Manju Chapagain*	Lecturer, Asian Institute of Nursing Education, Guwahati, Assam, India. *Corresponding Author
Dr. (Mrs.) Unmona Borgohain Saikia	Dean, Faculty of nursing, SSUHS. Principal, Asian Institute of Nursing Education, Guwahati, Assam, India.

ABSTRACT The global state of emergency caused by COVID-19 has put tremendous pressure on nursing services along with the other frontline workers. The physical as well as the mental health of ICU nurses' are affected by excessive workload, insufficient resources, excessive work and environment stressors. **AIM:** Aim of The Study was to assess the level of stress amid COVID-19 pandemic among staff nurses working in ICU in selected hospitals of Kamrup (M), Assam. **METHODS AND MATERIALS:** A descriptive research design was used to accomplish the objectives. Study was undertaken on 150 staff nurses working in ICU of selected hospitals of Kamrup (M), Assam by using convenience sampling. Inventory checklist was used to assess level of stress. The reliability of the tool was done by using Split half method, where r¹ = 0.91 so it was found to be reliable. Modified lazaus and Folkman's stress and coping model, 1966 was used as conceptual framework. **RESULTS**: Out of 150 staff nurses, majority 129(86%) belongs to 21-30 years of age,146(97%) were female, 122(81%) were unmarried, 130(87%) don't have child, 54(36%) had 3-4 family members, 92(61%) were GNM, 60(40%) had <1 year of experience and 60(40%) had 1-5 years of experience, 77(51%) had ≤ 15,000 income per month, 96(64%) had no deduction in their salary, 113(75%) had no increment in their salary, 121(81%) stayed in rented house, 74(49%) reside in distance of 1-5 km,140(93%) had shifting type of work schedule, 91(61%) didn't attend any COVID-19 training, out of 59 staff nurses, majority 39(66%) had attended 1 session, out of 150 staff nurses, majority 58(39%) had 26 working days per month, 89(59%) had taken care of COVID-19 patients, 82(55%) had history of being quarantined, out of 82 staff nurses, majority 37(45%) were quarantined for 7-14 days. In level of stress regarding physiological aspects, majority i.e. 138(92%) had low stress, 11(7%) had moderate stress and only 1(0.67%) had high stress. With respect to psychological aspects, majority i.e.91 (61%) had low stress and 59(39%) had moderate stress. Considering the behavioural problems, majority i.e. 135(90%) had low stress and 15(10%) had moderate stress. The overall level of stress among staff nurses revealed that 125(83%) had low stress and 25(17%) had moderate stress and the mean score of stress was 28.76 ± 12.21 with minimum score of 3.0 and maximum score of 72.0. It was observed that none of the demographic variables had shown statistically significant association with level of stress among COVID-19 pandemic among staff nurse.**CONCLUSION:** From this study it was concluded that majority of staff nurses had low stress with regards to physiological, psychological and behavioural aspects.

INTRODUCTION

The World had witnessed the first outbreak of the SARS-CoV-2 virus, known as COVID-19 which was reported in Wuhan, China in December 2019.[1]Since the start of the pandemic to 16 May 2021, 2, 46, 83,242 cases of COVID-19 has been reported in India. [2] Along with the other frontline workers, the global state of emergency caused by COVID-19 has put tremendous pressure on nursing services also. The physical as well as the mental health of ICU nurses' are affected by excessive workload, insufficient resources and excessive work environment stressors.[3]

Stress refers to individuals reactions to different situations in both positive and negative ways. The physical, psychological and behavioural changes can be seen due to stress. Stress at work is referred to the interaction between the individual and the work environment where negative emotions are generated by the work. These experiences of negative reactions lead to the high stress. As a result of stress several adverse symptoms, such as headache, anxiety, insomnia, fatigue, and gastrointestinal discomfort along with increased family conflicts, decreased work quality, interpersonal relationship disorders, and other negative effects can occur.[4]

Nursing is a stressful occupation which affects directly the work with people who suffer and require abundant attention, compassion, and sympathy. Such situations may make the nurses irritate, depressed and disappointed.[5]

Excessive work load, work hours, lack of adequate PPE, information overdose related to Covid-19, lack of emotional support systems and increase in infection rates among medical staff can be the main reasons for stress.[6]

Nurses are the true heroes who risk everything to care for patients as a frontline health care worker. Despite the stress and anxiety generated by the workplace environment, the practicing nurses who have worked long shifts are often not provided with adequate emotional support. The physical and mental exhaustion, lack of knowledge, and in many cases, lack of skills and experiences to care for patients can lead to negative emotions and psychological trauma.[7]

A study published on 23rd March 2020 in the Medical Journal JAMA found that among 1257 health care workers working in COVID-19 patients in China 50.4%, 44.6%, 34% and 71.5% reported symptoms of depression, anxiety, insomnia and distress respectively. Nurses were among those with the most severe symptoms.[8]

OBJECTIVES:
- To assess the level of stress amid COVID-19 pandemic among staff nurses working in ICU in selected hospitals of Kamrup (M), Assam.
- To find out association between the level of stress amid COVID-19 pandemic among staff nurses working in ICU in selected hospitals of Kamrup (M), Assam with their selected demographic variables.

REVIEW OF LITERATURE
Section I: Literature Related To Work Stress among Nurses
Faraji A, Karimi M, Azizi SM, Janatolmakan M, Khatony A (July – August 2018), conducted a cross-sectional study on occupational stress and its related demographic factors among 155 Iranian CCU nurses using random sampling technique. The Osipow Occupational Stress questionnaire was used for data collection. The result revealed that the mean of nurses' occupational stress was 210.13 ± 40.87 out of 300, which was at the "moderate-to-high" level. There was no statistically significant difference between the mean occupational stress and variables of sex, age, academic degree and working experience. [9]

Section II: Literature Review Related To Covid-19
Sagherian K, Steege LM, Cobb SJ, Cho H (2020), conducted a cross-sectional study on insomnia, fatigue and psychosocial

well–being during COVID–19 pandemic among 587 hospital nursing staff in the United States using convenience sampling technique. The result showed that 13.12%, 41.49%, 39.72% and 5.67% of the sample had no insomnia, sub threshold, moderate and severe forms of insomnia respectively. The sample had a mean score of 6.10 that indicated moderate levels of psychological distress. 47.39% and 62.32% of the sample had possible depression and anxiety, respectively.[10]

RESEARCH METHODOLOGY
Research Approach: Quantitative research
Research Design: Descriptive research design
Research Variable: Level of stress amid COVID-19 pandemic
Demographic Variable: Age, gender, marital status, having children, number of family members, professional qualification, years of experience, income per month, deduction of salary during this pandemic situation, increment of salary during this pandemic situation, types of residence, distance from residence to work place, work schedule, training attended on COVID-19, number of working days per month, taken care of COVID-19 patient, previous history of being quarantined.

Setting of the study: GNRC Hospital Dispur, Assam, GNRC Hospital Sixmile, Guwahati, Assam, Health City Hospital, Guwahati, Assam.

Population: Staff nurses

Target Population: Staff nurses working in ICU, CCU, and CTVS unit

Accessible Population: Staff nurses working in ICU, CCU and CTVS unit in selected hospitals of Kamrup (M), Assam.

Sample: Staff nurses working in ICU, CCU, CTVS unit in selected hospitals of Kamrup (M), Assam, who fulfilled the inclusion criteria.

Sample Size: 150

Inclusion Criteria: In this study inclusion criteria: - Staff nurses who are-
• willing to give consent for participating in the study
• available during the period of data collection.

Exclusion Criteria: Staff nurses who are shifted to ICU only for one day.

Tool and Technique: Inventory checklist was used to assess the level of stress of staff nurses and the technique was self report.

Scoring Key:
There is no right and wrong answer in any question.
For physiological problems, psychological aspects and behavioural problems of stress, there are 4 responses and each responses has been given score-

Never=0
Occasionally=1
Most of the time=2
All the time=3
But, in case of questions no.14, 15, 19, 22,24,29,30 and 32 the scoring is as follows-
Never=3
Occasionally=2
Most of the time=1
All the time=0
The score of stress level was interpreted as-
0-42($\leq$33%) = Low stress
43-85(34%-68%) = Moderate stress
86-126(69%-100%) = High stress

Content Validity of the Tool: The prepared instrument along with the problem statement and objective was submitted to 9 experts from the field of Medical Surgical Nursing, Mental Health Nursing, Psychiatry and Clinical psychology.

Reliability of the Tool:
The reliability of the tool has been done by using Split half method. The reliability of the tool was 0.91so it was found to be reliable to proceed with the main study.

Pilot Study: The pilot study was conducted from 9/11/2020.10 samples were selected using convenience sampling technique and the study was found to be feasible.

Main Study: The data collection period was scheduled from 14th December 2020 to 14th January 2021.The study was conducted after obtaining permission from the respective authorities of the selected hospitals. The list of staff nurses working in ICU were taken from ICU incharge. A brief self-introduction and the purpose of conducting the research study was explained to the respondents and who were willing to participate in study were selected as a sample according to their convenience and informed consent was taken thereafter. Levels of stress of the respondents were assessed by administering the structured inventory checklist, and then the investigator collected back the tool.

RESULTS
Table I: Frequency and Percentage distribution of staff nurses according to their demographic variables   n=150

Demographic Variables	Frequency (f)	Percentage (%)
Age in years		
21 – 30	129	86
31 – 40	14	9
41 – 50	7	5
>51	0	0
Gender		
Male	4	3
Female	146	97
Transgender	0	0
Marital status		
Married	28	19
Unmarried	122	81
Having children		
Yes	20	13
No	130	87
Number of family members		
Lives alone	43	29
2 persons	30	20
3 – 4 persons	54	36
5 or more persons	23	15
Professional qualification		
GNM	92	61
Post Basic B.Sc. Nursing	16	11
Basic B.Sc. Nursing	42	28
M.Sc. Nursing	0	0
Years of experience		
<1 year	60	40
1 – 5 years	60	40
6 – 10 years	14	9
>10 years	16	11
Income per month (in Rs.)		
$\leq$15000	77	51
15001 – 20000	43	29
20001 – 25000	10	7
>25000	20	13
Any deduction of salary during this pandemic situation?		
Yes	54	36
No	96	64
Any increment of salary during this pandemic situation?		
Yes	37	25
No	113	75
Type of Residence		
Own	10	7

Rented House	121	81
Paying Guest	14	9
Hospital Quarter	5	3
Distance from residence to work place (in km)		
<1	41	27
1 – 5	74	49
6 – 10	26	18
>10	9	6
Work Schedule		
Shifting	140	93
General	10	7
Attended any training on COVID-19		
Yes	59	39
No	91	61
If yes, Number of session-		
1 session	39	66
2 sessions	14	24
>2 sessions	6	10
Number of working days per month		
22 days	1	1
23 days	1	1
24 days	29	19
25 days	57	38
26 days	58	39
27 days	4	2
Did you take care of COVID-19 patient?		
Yes	89	59
No	61	41
Previous history of being quarantined		
Yes	82	55
No	68	45
If yes then for how many days		
<7 days	23	28
7 – 14 days	37	45
>14 days	22	27

Table II: Frequency and percentage distribution of staff nurses according to the level of stress

n=150

Stress Aspects	Level of stress						Mean	SD	Range Of Score	Total Score
	Low stress (<33%)		Moderate stress (34-68%)		High stress (69-100%)					
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)				
Physiological Aspects	138	92	11	7	1	1	5.91	4.21	0-25	126
Psychological Aspects	91	61	59	39	0	0	21.18	7.42	3-43	
Behavioral Problems	135	90	15	10	0	0	2.66	2.46	0-13	
OVERALL	125	83	25	17	0	0	28.76	12.21	3-72	

The findings of the present study is in accord with the study conducted by Mira JJ, Carrillo I, Guilabert M, Mula A, Martin-Delgado J, Pérez-

Jover MV, et al (2020) who conducted a cross sectional study on acute stress of the healthcare workforce during the covid-19 pandemic evolution in Spain using non-randomized sample of 685 professionals. The study findings revealed that among the participants 44.2% had good emotional adjustment, 27.4% had tolerable level of distress, 23.9% had medium-high emotional load and only 4.5% had extreme acute stress. [11]

The findings of the present study is in accord with the study conducted by Cui S, Jiang Y, Shi Q, Zhang L, Kong D, Qian M, et al. (2020) who conducted a cross sectional survey on impact of COVID-19 on psychology of nurses working in the emergency and fever outpatient among 453 nurses from hospitals in Jiangsu Province using convenience sampling technique. Data were obtained by self-administered online questionnaires. The study findings revealed that among the participants, 281(62.03%) had no anxiety symptoms, 154(34.00%) had mild anxiety, 16(3.53%) had moderate anxiety and 2(0.44%) had severe anxiety.229 (50.55%) participants were more likely to respond positively to stress, while 224(49.45%) were more likely to respond negatively. [12]

The present study findings of level of stress goes contrast with the findings of Sagherian K, Steege LM, Cobb SJ, Cho H (2020) , conducted a cross-sectional study on insomnia, fatigue and psychological well-being during COVID-19 pandemic among 587 hospital nursing staff in the United States using convenience sampling technique. The result showed that 13.12%, 41.49%, 39.72% and 5.67% of the sample had no insomnia, sub threshold, moderate and severe forms of insomnia respectively. The sample had a mean score of 6.10 that indicated moderate levels of psychological distress. 47.39% and 62.32% of the sample had possible depression and anxiety, respectively. [10]

The above mentioned study was done on May-June month. During these months the COVID-19 cases were at peak level and all the nursing staffs as well as the system were not prepared both mentally and physically. So, their stress levels were also high as this COVID was very new to everyone.

But during December-January months the numbers of COVID cases were reducing and many research studies have already done and almost vaccine was in the way. Special training, in-service educations regarding COVID-19 were also provided to the front line health workers. During December and January they became familiar to wear PPE kit and they were confident enough to handle the situation as well as to deal with COVID-19 patients compare to the early stage of COVID-19.

Table III: Association of level of stress amid covid-19 pandemic among staff nurses with their selected demographic variables

n=150

SL No.	Demographic variable	Chi-square	d.f	P value	Remark
1.	Age in years	1.711	2	0.376	NS as p>0.05
2.	Gender	0.822	1	1.000	NS as p>0.05
3.	Marital status	2.248	1	0.167	NS as p>0.05
4.	Having children	2.262	1	0.199	NS as p>0.05
5.	Number of family members	4.397	3	0.219	NS as p>0.05
6.,	Professional qualification	1.367	2	0.490	NS as p>0.05
7.	Years of experience	2.036	3	0.577	NS as p>0.05
8.	Income per month (in Rs.)	2.822	3	0.411	NS as p>0.05
9.	Deduction of salary during this pandemic situation	0.208	1	0.654	NS as p>0.05
10.	Increment of salary during this pandemic	0.007	1	1.000	NS as p>0.05
11.	Type of residence	2.113	3	0.569	NS as p>0.05
12.	Distance from residence to work place(in KM)	1.892	3	0.626	NS as p>0.05
13.	Work schedule	2.143	1	0.215	NS as p>0.05

14.	Attended training on COVID-19	0.274	2	0.657	NS as p>0.05
14.1	Number of training session	0.811	3	0.896	NS as p>0.05
15.	Number of working days per month	7.080	5	0.196	NS as p>0.05
16.	Taken care of COVID-19 patient	0.934	1	0.379	NS as p>0.05
17.	Previous history of being quarantined	0.086	1	0.828	NS as p>0.05
17.1	If yes then for how many days	2.053	2	0.358	NS as p>0.05

NS-Not Significant, df-Degree of Freedom

The table III shows the association of level of stress amid COVID-19 pandemic among staff nurses with their selected demographic variables. It was observed that none of the demographic variables had shown statistically significant association with level of stress amid COVID-19 pandemic among staff nurses.

CONCLUSION:
The following conclusions were drawn from the present study:

In level of stress, majority 125(83%) had low stress and 25(17%) had moderate stress.

The mean score of stress was 28.76±12.21 with minimum score of 3.0 and maximum score of 72.0.

Thus, this study concluded that majority of staff nurses have low stress because they have well adopted with the pandemic situation.

REFERENCES:

1. Coronavirus Disease (COVID-19) - events as they happen. (n.d.). Retrieved July 13, 2021, from Who.int website: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen
2. Coronavirus in India: Latest map and case count. (n.d.). Retrieved May 16, 2021, from Covid19india.org website: https://www.covid19india.org/
3. Del Pozo-Herce, P., Garrido-García, R., Santolalla-Arnedo, I., Gea-Caballero, V., García-Molina, P., Ruiz de Viñaspre-Hernández, R., … Juárez-Vela, R. (2021). Psychological impact on the nursing professionals of the Rioja Health Service (Spain) due to the SARS-CoV-2 virus. *International Journal of Environmental Research and Public Health*, *18*(2), 580.
4. Kuo, F.-L., Yang, P.-H., Hsu, H.-T., Su, C.-Y., Chen, C.-H., Yeh, I.-J., … Chen, L.-C. (2020). Survey on perceived work stress and its influencing factors among hospital staff during the COVID-19 pandemic in Taiwan. *The Kaohsiung Journal of Medical Sciences*, *36*(11), 944–952.
5. Preto, V. A., & Pedrão, L. J. (2009). Stress among nurses who work at the intensive care unit. *Revista da Escola de Enfermagem da U S P*, *43*(4), 841–848.
6. Song, X., Fu, W., Liu, X., Luo, Z., Wang, R., Zhou, N., … Lv, C. (2020). Mental health status of medical staff in emergency departments during the Coronavirus disease 2019 epidemic in China. *Brain, Behavior, and Immunity*, *88*, 60–65.
7. Schutz, V., & Shattell, M. (2020). Impact of COVID-19: What does it mean for nurses and health systems? *Journal of Psychosocial Nursing and Mental Health Services*, *58*(8), 2–3.
8. Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., … Hu, S. (2020). Factors associated with mental health outcomes among health care workers exposed to Coronavirus disease 2019. *JAMA Network Open*, *3*(3), e203976.
9. Faraji, A., Karimi, M., Azizi, S. M., Janatolmakan, M., & Khatony, A. (2019). Occupational stress and its related demographic factors among Iranian CCU nurses: a cross-sectional study. *BMC Research Notes*, *12*(1), 634.
10. Sagherian, K., Steege, L. M., Cobb, S. J., & Cho, H. (2020). Insomnia, fatigue and psychosocial well-being during COVID-19 pandemic: A cross-sectional survey of hospital nursing staff in the United States. *Journal of Clinical Nursing*, (jocn.15566). doi:10.1111/jocn.15566
11. Mira, J. J., Carrillo, I., Guilabert, M., Mula, A., Martin-Delgado, J., Pérez-Jover, M. V., … SARS-CoV-2 Second Victim Study Group. (2020). Acute stress of the healthcare workforce during the COVID-19 pandemic evolution: a cross-sectional study in Spain. *BMJ Open*, *10*(11), e042555.
12. Cui, S., Jiang, Y., Shi, Q., Zhang, L., Kong, D., Qian, M., & Chu, J. (2020). Impact of COVID-19 on psychology of nurses working in the emergency and fever outpatient: A cross-sectional survey. doi:10.21203/rs.3.rs-20777/v1