

Stress and its Influencing Factors among Intern Nurses during Pandemic Outbreak of Covid - 19

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ABSTRACT:

Objectives: To investigate the frequency of stress and its influencing factors among intern nurses during the pandemic outbreak of Covid-19 in Karachi, Pakistan.

Methodology: This descriptive study was conducted among intern nurses who were working in different hospitals of Karachi, Pakistan from 15th August to 15th September 2021. A total of 400 intern nurses were enrolled by using purposive sampling technique. Inclusion criteria: Intern nurses who were assigned in Covid-19 department/units. Exclusion criteria: Intern nurses who were not willing or absent at the time of data collection. Data were collected through a questionnaire and consists of three sections: First section included a General Health Questionnaire (GHQ-12). Second section is about influencing factors of stress, and third section encompassed with demographic information. The data were analyzed by using SPSS 20.

Results: Out of total 400 intern nurses, n=305 (76%) were in a high stress and n=95 (24 %) were reported a low stress. Four influencing factors were significantly (P-value<0.05) associated with level of stress of intern nurses. i.e.: Chances of having an infection (P- value=0.005), inadequate personal protective equipment (P- value= 0.000), guilt to be a nurse (P- value=0.003), and long hours of duties (P-value= 0.001).

Conclusion: Present study had explored that majority of intern nurses were in high stress and four influencing factors were significantly associated with level of stress. Such as chances of having an infection, inadequate personal protective equipment and guilt to be a nurse, long duty hours.

KEYWORDS: Intern Nurses, Stress, Influencing factors, COVID-19

INTRODUCTION

COVID-19 disease is a health crisis globally. According to W.H.O Global Report morbidity and mortality rate are still very high with current

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estimates of 649,038,437 and 6,645,812 respectively.^{1,2} As mortality and morbidity increased worldwide it provoked significant stress level of nurses.³ This is because of nurses were first witnesses of Covid-19 patient's disease severity and painful deaths of Covid-19 patients.^{1,2} According to Lai et al study, health care professionals are suffering from psychological distress during Covid-19 pandemic due to raising number of cases and deaths.⁴ Moreover this stress full condition was aggravated due to shortage of health care providers and personal protective equipment, coworkers infected with covid-19, ineffective preventive measures and inadequate support from supervisors, seniors and peers.⁴

Internship is transitional phase of student nurses in which they may learn to integrate theoretical knowledge into clinical practice.⁵ It may build them cognitive and reflective abilities to perform nursing skills. During this time, they are being trained into a various clinical setting from

Intensive Care Units (ICU) to High Dependent Unit (HDU) and general wards.⁵ Usually, Intern nurses are in stress during this period (internship) that is considered normal due to novelty of their practice at clinical settings.⁵ According to Elsaid et al (2020) study in Egypt, found 100% of intern nurses had stress during their internship in pre-pandemic (COVID-19).⁶

Globally, in this pandemic situation hospital and clinical staff were restructured to handle the heavy flow of COVID-19 patients.⁷ Due to shortage of registered nurses, intern nurses were assigned in Covid-19 departments as a soldier to help patients to fight against covid-19.^{4,5} One of the survey highlighted that pandemic covid-19 has changed traditional type of clinical practice of internship and intern nurses trapped into ethical and legal dilemma.⁸ It increased strain level of intern nurses about risk of infection and fear of transmitting of infection to patients, colleagues, friends and families.⁹ This also exposed intern nurses to various stressors. Such as regret to be part of nursing profession, dissatisfaction and feeling of tiredness, long duty hours and lack of appreciation from seniors.^{8,9} A descriptive study highlighted that intern nurses were in stress due to unpredictable workload and assignments.⁶ One of the studies found that reason of stress among intern nurses and in health care providers were restriction on meeting with their family members.^{8,9}

At present time, there is dearth of literature of previous studies which solely linked to stress of intern nurses during the pandemic covid-19. Therefore, it is mandatory to investigate frequency of stress and its influencing factors among intern nurses during pandemic Covid-19 in Karachi. Furthermore, current study is considered to establish a base for intervention related to mental distress of intern nurses in Karachi, Pakistan.

METHODOLOGY

This descriptive study was conducted at different hospitals of Karachi, Pakistan among intern nurses from 15th August to 15th October, 2021. The study was approved by IRB (Institutional Review Board) of Dow University of Health Sciences of Karachi (Ref: IRB-

2130/DUHS/approval/2021). Before data collection, consent was obtained from all study participants. A purposive sampling technique was used to enroll participants in the study. Inclusion criteria: Intern nurses who were assigned in Covid-19 department/units. Exclusion criteria: Intern nurses who were not willing or absent at the time of data collection.

Sample size of the study was calculated by using "Open epi software" by considering 50% of estimated population, 5% of margin of error and 90% of confidence of interval. On initial stage, calculated sample size was 384 which was raised to 400 to cover dropout rate of participants. According to objectives of study, two open access, well-structured questionnaire was adapted, which were used in previous studies.^{4,8} Furthermore, Cronbach's alpha coefficient test illustrated validity and reliability of questionnaire that was 0.78 and 0.82 collectively after 10% of pilot study.

The questionnaire has three sections: Section one included 12 items of General Health Questionnaire (GHQ-12). It is comprised of four-point Likert scale (0= No symptoms, 1 = Usual symptoms, 2 = More symptoms than usual, and 3= Symptoms that is much more than usual). Total marks ranging from 0 to 36. The presence of low and high stress among intern nurses established through cut off value (If it is \leq to 18, it is marked low stress), and (If it is $>$ 18, it is marked high stress). Section two included 10 influencing factors of stress of intern nurses. For example: chances of having an infection, inadequate personal protective equipment and guilt to be a nurse, long duty hours, lack of sleep and feeling fatigue, and support from colleagues and supervisors, occupational competence, heavy workload, dissatisfied with pre-internship orientation and frequent hand wash. Participants had 02 options to response (Yes or No). Section three comprised of demographic information of intern nurses. Such as age, gender, clinical setting, working experience and frequently use of social media.

The data were analyzed by using SPSS 20. Frequencies and percentages were used to find stress and its influencing factors. Bar charts were used for pictorial view of stress. Furthermore, chi square test was applied to analyze the significant relationship of stress with its influencing factors.

P-value <0.05 was considered as a statistically significant.

RESULTS

In current study, a total 400 intern nurses participated, 305(76%) were in high stress and 95(24%) had low stress (Figure1) Four influencing factors were significantly related to level of stress among intern nurses. For instances: probabilities of getting infection of COVID-19, inadequacy of personal protective equipment, and guilt to be a nurse, long hours of duties (Table: 1). A majority of intern nurses who were in high stress; whose age less than 25 years 200(65.5%), mostly were female 250(81.9%), and working in Intensive Care Unit 180(59.0%) and clinical experience was lies between 1 to 4 months 122(40.0%) and used social media frequently 220 (72.1%) (Table: 2).

Table:1 Influencing Factors of Stress among Intern Nurses

| Inflencing Factors | High Stress | | Low stress | P-value |
|--|--------------|------------|-------------|---------|
| | N= 305 (76%) | | N= 95 (24%) | |
| 1. Probabilities of getting infection | Yes | 240(78.7) | 50 (52.6) | 0.005* |
| | No | 65(21.3) | 45 (47.4) | |
| 2. Inadequate personal protective equipment (PPE) | Yes | 220 (72.1) | 55 (57.9) | 0.000* |
| | No | 80(27.9) | 40 (42.1) | |
| 3.Regret on decision to become nurse | Yes | 150 (49.2) | 45 (47.4) | 0.003* |
| | No | 155(58.8) | 50 (52.6) | |
| 4. long hours of duties | Yes | 230(75.5) | 30 (31.6) | 0.001* |
| | No | 75(24.5) | 65 (68.4) | |
| 5. Lack of sleep and feeling fatigue | Yes | 125(41.0) | 75 (78.9) | 0.024 |
| | No | 180(59.0) | 20 (21.0) | |
| 6. lack of support from colleagues and supervisors | Yes | 115(37.7) | 54(56.8) | 0.125 |
| | No | 190(62.3) | 41(43.2) | |
| 7.Occupational competence | Yes | 210 (68.9) | 45(47.4) | 0.345 |
| | No | 95 (31.1) | 50(52.6) | |
| 8.Heavy workload | Yes | 128(42.0) | 70(73.7) | 0.501 |
| | No | 177(58.0) | 25(26.3) | |
| 9. Dissatisfied with pre-internship Orientation | Yes | 212(69.5) | 60(63.2) | 0.532 |
| | NO | 93(35.5) | 35(36.8) | |
| 10.Frequent hand wash | Yes | 100(32.8) | 70(73.7) | 0.078 |
| | NO | 205(67.2) | 25(26.) | |

Chi-square test (p-value <0.05)

Figure 1: Level of Stress among Intern Nurses

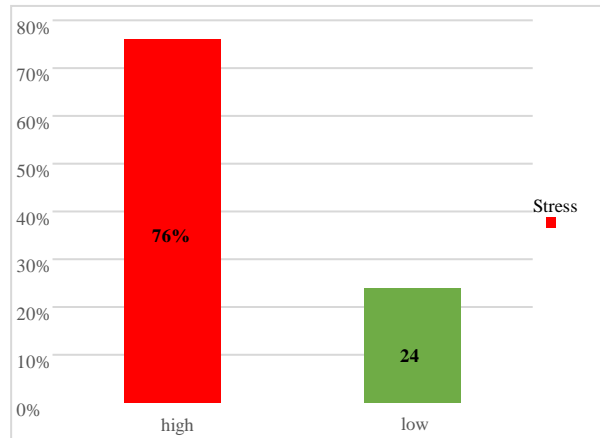


Table: 2: Demographic Factors of Level of Stress among Intern Nurses

| Items | High Stress 305(76%) | Low stress 95(24%) |
|---------------------------------------|----------------------|--------------------|
| Age | | |
| <25 years | 200(65.5) | 22(23.2) |
| 26-30 years | 106(34.7) | 48(50.5) |
| 31-35years | 94(30.8) | 25(27.1) |
| Gender | | |
| Male | 150(49.1) | 50(52.6) |
| Female | 250(81.9) | 45(47.3) |
| Clinical Setting | | |
| Covid-19 ICU | 180(59.0) | 31(32.6) |
| Covid-19 HDU | 153(50.1) | 24(25.2) |
| Covid-19 Ward | 67(21.9) | 40(42.1) |
| Clinical experience | | |
| 1 to 4 months | 122(40.0) | 15(15.7) |
| 5 to 9 months | 43(14.0) | 38(40) |
| More than 10 months | 35(11.4) | 42(44.2) |
| Use of social media frequently | | |
| Yes | 220(72.1) | 20(21.0) |
| No | 80(26.2) | 75(78.9) |

DISSUCION

In current study, a total 400 intern nurses participated in study, and 305(76%) were in high stress and 95(24%) had low stress. These findings were in-lined with previous descriptive studies which was conducted among health care professionals in Egypt, Japan and Turkey.^{6,10,11} However contradicted findings were reported by studies conducted in various countries such as Indonesia Italy, Mirpur Khas, Pakistan, China,

New York and India.¹²⁻¹⁷ Moreover, Wasim et.al investigated that overall health care providers were suffering from psychological problems in facility of health provision while caring of during covid-19. Maximum nursing staff were in high level of stress.¹⁸

Present study has explored four influencing factors which were significantly related to level of stress. For examples: probabilities of getting infection of COVID-19, inadequacy of personal protective equipment, and guilt on decision to be a nurse, long hours of duties. Similar findings were supported by numerous descriptive studies that had been found significant relationship with factors of stress. For instances; Spreading of Covid-19 infection to their families, regarding PPE, lengthy duty hours, physical and mental fatigue and lack of training before full time duties.^{8,10,16,17} Nursing professionals have played a vital role during Covid-19.^{18,19} This pandemic caused worst situations in Pakistan because of limited resources and nurses were not fully protected with personal protective equipment.¹⁹ Furthermore, few researches emphasized for proper training and facilitation of intern nurses before recruitment into clinical settings. So, mental health of intern nurses may be ensured from unavoidable condition of stress.^{5,6} In present study, most of intern nurses who were in high stress; whose age less than 25 years 200(65.5), female 250(81.9), working in Intensive Care Unit 180(59.0) and clinical experience was lies between 1 to 4 months 122(40.0) and used social media frequently 220 (72.1). Few studies findings were supported that intern nurses whose age group lies between 23 to 24 years, and had 8 months of clinical experience and their duty placement was in adult ward experienced more stress.^{20,21} Moreover, similar findings were supported by Imran et.al among postgraduate trainees that female participants had risk of psychological distress as compare to male participants.²² In contrast, study had found that male intern nurses had low stress as compare to female.¹⁷ Studies showed that female perception is quite different from male.^{22,23} Moreover, women are more vulnerable to stress and affected by social norms.²³

CONCLUSION

Present study found that majority of fresh intern nurses who were, working in Intensive care unit, were more stressed.

Four influencing factors were significantly associated with level of stress of intern nurses. For instance: Chances of having an infection, inadequate personal protective equipment and guilt to be nurse, long duty hours.

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REFERENCES

1. World- Health. Org. WHO Coronavirus (COVID-19) Dashboard Available from: <https://covid-19.who.int>. (cited 2022 Dec 10).
2. Riffe T, Acosta E. Data Resource Profile: coverage-DB: a global demographic database of COVID-19 cases and deaths. *Intern J Epid*. 2021 ;50(2): 390- 397.doi;10.1093/ije/dyab027.
3. Spoorthy MS, Pratapa SK, Mahant S. Mental health problems faced by healthcareworkers due to the COVID-19 pandemic–A review. *Asian J Psych*. 2020. ;51(1):102-119. doi; 10.1016/j.ajp.2020.102119.
4. Lai X, Wang M, Qin C, Tan L, Ran L, Chen D, et al. Coronavirus disease 2019 (COVID-2019) infection among health care workers and implications for prevention measures in a tertiary hospital in Wuhan, China. *JAMA Network open*. 2020 ;3(5):1-12. doi;10.1001/janetworkopen.2020.9666.
5. Duprez V, Vermote B, Van Hecke A, Verhaeghe R, Vansteenkiste M, Malfait S. Are internship experiences during a pandemic related to students' commitment to nursing education? A cross-sectional study. *Nurse Edu Today*. 2021 ;107(105):124-132. doi; 10.1016/j.nedt.2021.105124.
6. Eweida RS, Desoky GM, Khonji LM, Rashwan ZI. Mental strain and changes in psychological health hub among intern-nursing students at pediatric and medical surgical units amid ambience of COVID-19 pandemic: A comprehensive survey. *Nurse Edu in Pract*. 2020 ;49(10):10-29. doi; 10.1016/j.nepr.2020.102915.
7. Arabi YM, Azoulay E, Al-Dorzi HM, Phua J, Salluh J, Binnie A, Hodgson C, Angus DC, Cecconi M, Du B, Fowler R. How the COVID-19 pandemic will change the future of critical care. *Intensive Care Medicine*. (2021) ;47(3):282-291. doi;10.1007/s00134- 021-06352-y
8. Sperling D. Ethical dilemmas, perceived risk, and motivation among nurses during the COVID-19 pandemic. *Nurse ethics*. 2021 ;28(1):9-22. doi;10.1177/10969733020956376.
9. Safan SM, Ebrahim RM. Problems and Obstacles Facing Nursing Interns and Its Relation to Their Performance at Clinical Setting: A Comparative Study. *American J Nurse*. 2018;7(6):304-313. doi: 10.11648/j.ajns.20180706.24
10. Ishikawa M, Ogasawara T, Takahashi K, Ono T, Matsui K, Marshall S, et al. Psychological effects on healthcare workers during the COVID-19 outbreak: a single center study at a tertiary hospital in Tokyo, Japan. *Internal Med*. 2021;60(9):2771-2776. doi;10.2169/internalmedicine.7207-21.
11. Aslan I, Ochnik D, Çınar O. Exploring perceived stress among students in Turkey during the COVID-19 pandemic. *Int J Environ Res Public Health*. 2020;17(23):8961- 70. doi;10.3390/ijerph 7238961.

12. Fathiariani L, Nassimbwa J. Investigating the burden of mental distress among nurses at a provincial COVID-19 referral hospital in Indonesia: a cross-sectional study. *BMC Nurse*. 2021;20(1):1-8. doi:10.1186/s2912-021-00596-1
13. Benfante A, Di Tella M, Romeo A, Castelli L. Traumatic stress in healthcare workers during COVID-19 pandemic: a review of the immediate impact. *Front Psychol*. 2020 ;23 (11):28 -35. doi:10.3389/fpsyg.2020.569935.
14. Asif S, Noor FA, Nawaz Z. Assessment of Frequency and Severity of Stress among the Students of State School of Nursing Mirpur AJK by application of Perceived Stress Scale. *Age (years)*. *PJMHS*.20 2020;14 (3):1067-1069
15. Mo Y, Deng L, Zhang L, Lang Q, Liao C, Wang N, et al. Work stress among Chinese nurses to support Wuhan in fighting against COVID 19 epidemic. *J Nurse Manag*. 2020 ;28(5):1002-1009. doi: 10.1111/jonm.13014.
16. Shechter A, Diaz F, Moise N, Anstey DE, Ye S, Agarwal S, Birk JL, Brodie D, Cannone DE, Chang B, Claassen J. Psychological distress, coping behaviors, and preferences for support among New York healthcare workers during the COVID-19 pandemic. *Gen Hosp Psychiatry*.2020 ;66(1):1-8. doi: 10.1016/j.genhosppsych.2020.06.007.
17. Huded CB, Rasquinha SL, Rao P. Psychological impact of COVID-19 on medical interns–Findings from a nationwide survey. *J Edu Health Promot*. 2021;10(1): 155- 171. doi:10.4103/jehp-33-21.
18. Wasim T, e Raana G, Bushra N, Riaz A. Effect of COVID-19 pandemic on mental wellbeing of healthcare workers in tertiary care hospital. *Annals of King Edward Medical University*. 2020;26(Special Issue):140-144. doi:10.21649/ akemu. v26i Special Issue.3625
19. Mansoor S, Azad N, bin Zubair U, Waqar T, Butt A, ul Ain Q. Mental Health Impact of the COVID-19 Pandemic on Frontline Healthcare Workers at a Tertiary Care Hospital Rawalpindi, Pakistan. *J P Psych Soc*. 2020;17(4):7-12
20. Said RM, El-Shafei DA. Occupational stress, job satisfaction, and intent to leave: nurses working on front lines during COVID-19 pandemic in Zagazig City, Egypt. *Environ Sci Pollut Res Int*. 2021 ;28(7):8791-8801. doi: 10.1007/s11356-020-11235-8.
21. Sanghera J, Pattani N, Hashmi Y, Varley KF, Cheruvu MS, Bradley A, Burke JR. The impact of SARS-CoV-2 on the mental health of healthcare workers in a hospital setting A Systematic Review. *J Occup Health*. 2020;62(1):3-16. doi:10.1002/1348- 9585.12175.
22. Imran N, Masood HM, Ayub M, Gondal KM. Psychological impact of COVID-19 pandemic on postgraduate trainees: a cross-sectional survey. *Postgrad Med J*. 2021;97(1152):632-637. doi:10.1136/postgradmedj-2020-138364
23. Rabbani F, Khan HA, Piryani S, Khan AR, Abid F. Gender-specific psychological and social impact of COVID-19 in Pakistan. *B J Psych Open*. 2022;8(1) 1-8. doi.org/10.1192/bjo.2021.10

Authors' Contribution

| | |
|--------------------------------|---|
| Muhmooda Abdul Razzaque | Study Concept and design, literature search, data collection, analysis, first draft write-up. |
| Sabir Hussain | Study design, Literature search, data collection, final draft writes up. |
| Ghulam Qadir | Study concept and design, analysis, final review, overall supervision. |
| Yasmin Azad | Data collection, statistical analysis approved the manuscript. |
| AbdulWahid | Study Concept, data analysis, interpretation of results & approved the manuscript. |
| | All authors are equally accountable for search work and integrity. |

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