

Level Of Stress And Associated Factors Among Nurses Working In Critical Care Unit In Public Sector Hospital Lahore Pakistan

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Abstract

Background: The critical care unit in a hospital is a demanding and high-pressure environment where nurses often encounter complex medical cases, life-and-death situations, long working hours, and heavy workloads. So there was a need to find out the unique challenges faced by nurses in critical care units within this specific context.

Objective: To assess the level of stress and associated factors among nurses working in critical care units in tertiary care hospitals.

Methods: A quantitative study was done to collect data from nurses having sample size of 217 registered nurses from three selected hospitals in Pakistan (Services, Mayo hospital and Railway hospital). The nursing stress scale having close-ended questionnaire was used to collect data. Data were analyzed by using Chi-square test, frequency and percentage.

Results: The majority of participants were female, 78.8% and about 58.1% were staff working specifically in the ICU/CCU. Stress levels were categorized in three different manners including low level, Moderate level and high level of stress. Out of 217, 174 (80.2% nurses who participated in the study show moderate level of stress. However, 27 (12.4%) and 16 (7.4%) nurses show high and low level of stress respectively.

Conclusion: All in all critical care units are the most stressful environment in the hospital setting. Nurses working in these departments have different level of stress which may be related to work, interpersonal relations and some other causative factors. To improve the clinical practices of the nurses, stress and stressors should be managed properly and timely.

Keywords: Stress, nursing stress, occupational stress, tertiary care hospital and Pakistan.

Introduction: Stress is what mind and body experience while adopting continuous change. It

is how we react when we are under Pressure or feel threatened. It frequently occurs when we are

confronted with a circumstance that we do not believe we can handle or control (Anjum & Ming, 2018). When we are stressed, we may feel different symptoms which may need to be managed for instance; a large number of duties which may result in difficult to manage environment Samuel et al. (2018).

Around 33% of people report feeling extreme stress. The number of stressed people out of 143 countries globally, is 35% – that's 20% lower than the percentage of Americans who have stress (Rasool et al., 2021). The stress not only affects the physical health but it has an impact on finances beard by the patient. Stress, anxiety, and depression cost around \$1 trillion in lost productivity over global economy (Klapproth et al., 2020)

Stressors in the intensive care unit (ICU) include basic patient care, emotional needs, and counseling, as well as dealing with patients through interpersonal communication. They endure pain, grief, and death every day. Important issues in nursing include an increase in workload, getting stress from work, and a lack of family support (Murat et al., 2021).

Stress can cause anxiety, depression, sleep difficulties, post-traumatic stress disorder, and immunological dysfunction, an increase in cardiovascular risk factors, damaged family relationships, and burnout in healthcare professionals (Hayat & Afshari, 2021). Knowledge of the presence of stress is so vital, and if identified, should be addressed for timely intervention (Aslan & Pekince, 2021).

Stress is linked to lower quality of service, and a high percentage of absenteeism has a negative impact on the healthcare sector. All of these stressors can have an impact on healthcare workers' well-being, as well as health care and the requirements of patients and family (Kaur et al., 2020). As members of inter-professional teams,

nurses play an important role in providing care in Intensive Care Units (ICUs). ICU care is more complex than care offered elsewhere in the hospital. ICU nurses must regularly respond to significant expectations in order to fulfill the multiple duties that have been allocated to them (Liu et al., 2021).

They work as caregivers, health educators, researchers, and unit managers in intensive care units working in a field that involves such extensive multitasking, as well as a severe workload and the need to offer specialized care for critically ill and dependent patients, can be daunting for nurses (Hahad et al., 2019).

Stress has the potential to put the physical and mental well-being of nurses at risk, diminish their energy levels and job performance, and result in an inability to provide quality nursing care. These factors collectively have a negative effect on patient outcomes (Khalique et al., 2018). The overall mean (Standard Deviation: SD) score of occupational stress experienced by critical care nurses in public hospitals is 3.18 (0.94) (Chegin, 2019)

Statistically analyzing the prevalence of stress among ICU staff nurses is about 68.29%. Nurses working in intensive care are 48.78% mildly stressed and 19.51% moderately stressed (Steele et al., 2020). Hospital-based analytical cross-sectional study was conducted at two tertiary care teaching hospitals of Karachi. The study participants reported to suffer with job-related stress; mild stress 2.0%, moderate stress 36.5% and severe 61.5% (Burani et al., 2021).

Overall, this study seeks to shed light on the level of stress experienced by nurses working in critical care units in a public sector hospital in Lahore, Pakistan, and identify the associated factors. The findings of this study can contribute to the existing body of knowledge on occupational stress among nurses and inform the development of targeted interventions to alleviate

stress and enhance the working conditions for nurses in critical care units.

Methodology: A cross-sectional study design was employed to examine the stress levels among 217 nurses working in critical care units at Services, Mayo, and Railway hospitals in Lahore. This study encompassed a diverse population from various regions of the Punjab province. The participants were selected using a Random Sampling technique, adhering to specific inclusion and exclusion criteria. Inclusion criteria involved all staff nurses of both genders with a minimum clinical experience of one year, working in medical surgical emergency or ICU/CCU settings, and age below 60 years. Nurses engaged in administrative roles were excluded from the study.

Data collection was carried out using a modified version of the "Nursing Stress Scale questionnaire," consisting of 34 questions. Each question had four response options: Never (scored as 1), Occasionally (scored as 2), Frequently (scored as 3), and Very Frequently (scored as 4). The total score ranged from a minimum of 34 to a maximum of 136. Stress levels were categorized as follows: Low level of stress (scores 34-68, constituting less than 50% of the maximum score), Moderate level of stress (scores 69-103, representing 51-75% of the maximum score), and High level of stress (scores 104-136, exceeding 75% of the maximum score).

The collected data were analyzed using SPSS version 21, employing statistical tests such as chi-square, frequency, and percentage calculations.

Results

Table 1: Demographic data working in critical care unit in public sector hospital

		Frequency(n)	Percent (%)
Gender	Male	46	21.2
	Female	171	78.8
Department	ICU/CCU	126	58.1
	Emergency	91	41.9
	1-5 Year	80	36.9
Experience	6-10 Year	76	35.0
	More Than 10 Year	61	28.1
Designation	Head Nurse	14	6.5
	Charge Nurse	203	93.5
Education	Diploma	95	43.8
	Post RN/BSN	122	56.2
Job Nature	Permanent	201	92.6
	Contract	16	7.4
	Morning	127	58.5
Duty Shift	Evening	21	9.7
	Night	69	31.8

Analyzed by the frequency (n) and percentage (x)

Table No.1 shows the demographic data of the participants. It highlights most were female participants 78.8% staff working in ICU/CCU is

58.1%, 36.9% having experience under 5 years, most of them were charge nurses having 93.5%,56.2 of them have done Post RN,92.6 have

permanent job nature and 58.5 are working in morning shift .

Table 2: Stress level among nurses working in critical care unit in public sector hospital

Level of Stress	N	%	X	S.D	P-Value
Low Level Stress Score (34-68)	16	7.4			
Moderate Level Stress Score (69-103)	174	80.2	87.90	13.4	0.000
High Level Stress Score (104-136)	27	12.4			

Analyzed by chi square test with a CI; 95 and d; 5%

Table no.2 indicated the level of stress among nurses working in critical care units in tertiary care hospitals. Regarding the stress level of nurses about 174 (80.2%) with Moderate level of stress had score (69-103) , followed by high level

stress among 27(12.4%) with a score of (104-136) while only 16 participants (7.4%) with a low level stress with a score (34-68). It shows that most of the nurses with a moderate and high level of stress about 80.2% and 12.4% with a mean and standard deviation 87.90 ± 13.4 ; there were a significant difference between the stress levels with p value equal to 0.000.

Table 3: Associated factors among nurses working in Critical Care unit

	N	X	S.D	Df	P-value
Level of stress among nurses due to factor death or dying	217	19.0	3.55	16	0.000
Level of stress among nurses due to factor Conflict with physician	217	11.9	3.38	12	0.000
Level of stress among nurses due to factor Inadequate Preparation	217	6.80	1.64	9	0.000
Level of stress among nurses due to factor Lack of support	217	13.6	3.34	13	0.000
Level of stress among nurses due to factor Conflict with other nurses	217	17.3	2.56	13	0.000
Level of stress among nurses due to factor Work load	217	11.9	2.34	12	0.000

Analyzed by chi square test with a CI; 95 and d: 5%

The main findings of the table presented the causes and risk factors of stress experienced by nurses in a critical care unit. It indicated that stress could arise from various sources. Firstly, stress could be related to death and dying, with a mean score of (19.0 ± 3.55) , indicating its significant impact. Secondly, conflicts with physicians were also identified as a potential stress factor, with a mean (11.9 ± 3.38) . Inadequate preparation was highlighted as another contributing factor with a mean (6.80 ± 1.64) . Furthermore, lack of support and the absence of an opportunity to openly discuss problems with other unit personnel were found to be associated with stress (13.6 ± 3.34) . Conflict with other nurses was also identified as a significant stress factor, with mean (17.3 ± 2.56) . Lastly, the workload was mentioned as a cause of stress, with (11.9 ± 2.34) . Overall, the table provided insights into the causes and risk factors of stress among nurses working in a critical care unit, encompassing issues such as death and dying, conflicts, inadequate preparation, lack of support, and workload.

Discussion: The level of stress experienced by nurses working in critical care units has become a significant concern in healthcare settings worldwide. Nurses in these demanding environments face unique challenges that can lead to high levels of stress, affecting their well-being and the quality of care they provide. Understanding the factors associated with stress among nurses in critical care units is crucial for developing effective strategies to promote their mental health and job satisfaction.

In this study most of the participant were female 78.8 %, staff working in ICU/CCU is 58.1%, having experience under 5 years 36.9 %, most of them (93.5%) are charge nurses. Almost, 56.2% have done Post RN. 92.6 % were doing permanent job and 58.5% are working in morning

shift. This study finding is supported by Zulfiqar and Rafiq (2020) results stated that most of the nurses were female 96.1%. While the experience of the nurses in his study was 33.1% had been working in the hospital for 10 years or less and staff had a nursing diploma was 49.4%.

The finding of our study regarding first objective revealed that most of the nurses with a moderate 80.2% and high level 12.4% of stress. This study finding is supported by Cui et al. (2021) in China result showed that above half of the nurses were with a high level of stress (50.55%) while only (49.45%) were with a low level of stress and stress can be decreased by using proper stress reduction techniques.

However the findings of Bardhan et al. (2019) study reported high level stress about 93% among nurses due to psychosocial occupational stress, they further recommended that workplace stress can be decreased by using proper stress reduction techniques. Is this techniques really work; the study of Jaber et al. (2022) stated that only 25.5% participants were reported with moderate to high levels of stress due to use of such types of techniques.

Our study find out that insights into the causes and risk factors of stress among nurses working in a critical care unit, encompassing issues such as death and dying, conflicts, inadequate preparation, lack of support, and workload. This study finding is supported by Said and El-Shafei (2021) in egypt, 210 nurses from Zagazig Fever Hospital (ZFH) (Group I) against 210 nurses from Zagazig General Hospital (ZGH) (Group II) participated in a research. The majority of nurses (75.2%) in ZFH were stressed, compared to 60.5% in ZGH. Workload (98.6%), dealing with death and dying (96.7%), and personal needs and worries (95.7%) are the top three factors. Strategies for reducing perceived job-related stress and increasing job satisfaction must be implemented.

Furthermore according to the finding of Arnetz et al. (2020) the question domain work load; stress is directly related when there were a technical fault in the machine like flow meter , computer and ECG (26.3%), in the last regarding uncertainty concerning toward treatment ; operation and functioning of specialized equipment not available (12.0%) followed by Inadequate information from a physician regarding the medical condition of a patient (7.4%).

Similarly the report of Rasool et al. (2020) expressed the disagreement with the doctor, Lack of chance to share my unfavorable views towards the patient to other members of the unit, Lack of ability to discuss difficulties openly with other unit employees, floating to other units, and Employee morale suffers as a result of harassment. Mobbing at work diminishes productivity, raises stress, anxiety, sadness, and irritation, and promotes poor job engagement, absenteeism, and work destruction. We may assume that employees who are happy and healthy are more productive. As a result, organizations must create a culture in which individuals may be their best and shine.

Conclusion: The stress levels among nurses were predominantly categorized as moderate and high, accounting for approximately 80.2% and 12.4% respectively. The primary causes and risk factors of stress among nurses in critical care units were identified as the highest stress level associated with performing procedures, receiving criticism from physicians, and experiencing conflicts with physicians. Additionally, nurses reported feeling inadequately prepared to address the emotional needs of patients' families and expressed a lack of opportunity to express negative emotions towards patients. Floating to other units and technical malfunctions in machines were also highlighted as stress-inducing factors. These factors can have a significant impact on the mental well-being of

nurses, leading to elevated levels of stress. Furthermore, conflicts with healthcare professionals, insufficient support, inadequate preparation, and organizational challenges were identified as additional contributors to stress among nurses in this particular environment.

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