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Original Research Article

Prevalence and Risk Factors of PSTD in Nurses Working in Intensive Care Unit

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Abstract: *Nurses working in intensive care units (ICUs) are exposed to high-stress environments, making them vulnerable to psychological distress, including post-traumatic stress disorder (PTSD). Identifying the incidence and associated risk factors of PTSD in ICU nurses is crucial for developing effective mental health interventions.* ***Objective:*** *To assess the incidence and risk factors of post-traumatic stress disorder in nurses working in the intensive care unit.* ***Methods:*** *A cross-sectional study was conducted in the Intensive Care Unit of Medicare Hospital, Multan from January 2024 to January 2025. A total of 100 registered nurses working in the ICU for at least 1 year were included in the study. Data was collected through questionnaires. Post-traumatic stress disorder was evaluated by the PTSD Checklist-Civilian Version. Burnout was assessed by a 22-item Maslach Burnout Inventory including questions about exhaustion, personal fulfillment, and depersonalization. A 25-item Connor-Davidson Resilience Scale to measure resilience, optimism and self-improvement. A 10-item Social Support Rating Scale was used to evaluate objective and subjective support and support utilization.* ***Results:*** *Among 100 nurses, the prevalence of PTSD was 20%. The mean PTSD score was 30.68 ± 10.16 with a minimum score was 10 and a maximum score of 55. The overall burnout score was 57.71 ± 7.07, 9.64 ± 2.45 for depersonalization, 23.53 ± 3.72 for exhaustion, and 26.71 ± 3.39 for personal accomplishment. There were significant differences between health status, experience, age, resilience score, and social support score in PTSD-positive and negative nurses ($p<0.05$). Multivariate analysis showed that burnout was independently associated with the incidence of PTSD ($p=0.003$) and resilience served as a protective factor.* ***Conclusion:*** *There is a high prevalence of PTSD among ICU nurses with burnout as an independent risk factor and resilience as a protective risk factor.*

Keywords: Intensive Care Unit, Nurses, Nursing, PTSD

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Introduction

Intensive care units are specialized hospital areas where critically ill patients are admitted to receive special treatment and monitoring. Nurses are present in the ICU round the clock to tend to patients and are required to possess advanced technical skills to handle emergencies and excessive workloads. (1). ICU is also the ward with the highest mortality rates and traumatic incidents like frequent resuscitations, palliative care, and medical malpractice (2).

Working in an environment with constant stressors, nurses are often stressed out on their jobs. About 30% of the nurses working in the ICU have been diagnosed with PTSD which affects their performance and renders them ineffective in managing patients in end-of-life situations. (3). Recovery from PTSD is a long process and can leave a lasting effect on the psychosocial health of the patient.

However, since traumatic events are part of the daily job of nurses, it is essential to diagnose PTSD at an early stage and recognize its causes to improve the working environment and job satisfaction of nurses. PTSD in healthcare workers has been linked to burnout where high levels of burnout significantly increase the risk of PTSD (4). Managing critical situations and deaths every day greatly affects their daily efficiency and quality of care.

This study was conducted to assess the incidence and risk factors of post-traumatic stress disorder in nurses working in the intensive care unit.

Methodology

A cross-sectional study was conducted in the Intensive Care Unit of Medicare Hospital, Multan from January 2024 to January 2025. A total of 100 registered nurses working in the ICU for at least 1 year were included in the study. Nurses with a history of physical or mental illness and pregnant or lactating participants were excluded. All participants verbally agreed to participate in the study.

Data was collected through questionnaires. Demographic details including age, marital status, qualification, gender, experience, job position, and monthly income were recorded. Post-traumatic stress disorder was evaluated by the PTSD Checklist-Civilian Version consisting of 17 questions assessing nurses for showing symptoms of hypervigilance, re-experiencing, and avoidance. The statements could be ranked on a Likert scale from 1 to 5 with 1 being not at all and 5 being extremely. The minimum score was 17 and the maximum score was 85 with a score of 38 or higher indicating PTSD.

Burnout was assessed by a 22-item Maslach Burnout Inventory including questions about exhaustion, personal fulfillment, and depersonalization. The severity of conditions could be ranked on a Likert scale from 0 to 6 with 0 being none and 6 being every day. The maximum score obtained could be 54, 48, and 30, respectively. An exhaustion core of 27 or higher, a personal fulfillment score of 33 or lower, and a depersonalization score of 13 or higher indicated burnout. A 25-item Connor-Davidson Resilience Scale to measure resilience, optimism and self-improvement. The questions could be answered on a Likert scale from 0 to 4 with 0 being not at all true and 4 being true almost all the time. The minimum score was 0 and the maximum score was 100 with a high score showing more resilience. A 10-item Social Support Rating Scale was used to evaluate objective and subjective support and support utilization.

All data was analyzed by SPSS version 22. Quantitative data including social and demographic information was calculated by x^2 test as frequency. PTSD, burnout, resilience, and social support score was calculated by ANOVA test as mean ± SD. The variables that were significant were included in the multivariate analysis. Statistical significance was taken at less than 0.05.

Results

Among 100 nurses, the prevalence of PTSD was 20%. The mean score was 30.68 ± 10.16 with a minimum score was 10 and a maximum score of 55. The mean re-experiencing score was 10.48 ± 3.91, the hypervigilance score 10.02 ± 3.27, and the avoidance score of 13.30 ± 3.94. In 20 patients (20%) diagnosed with PTSD, the overall burnout score was 57.71 ± 7.07, 9.64 ± 2.45 for depersonalization, 23.53 ± 3.72 for exhaustion and 26.71 ± 3.39 for personal accomplishment. In non-PTSD participants, the burnout rate was significantly lower i.e. 43.52 ± 11.57 as compared to nurses with PSTD. The participants differed significantly concerning sex, qualification, job title, marital status, and income (p>0.05), however, there were significant differences between health status, experience, age, resilience score, and social support score (p<0.05) (Table I). Multivariate analysis showed that burnout was independently associated with the incidence of PTSD (p=0.003) and resilience served as a protective factor (p=0.010). Nurses with poor health and 5 years or less experience are more likely to develop PTSD (Table II).

Table 1: Risk Factors of PTSD among ICU nurses

Variables	PTSD positive (n=20)	X^2/t	P
Mean age	33.28 ± 3.66	7.730	<0.001
Gender		1.766	0.179
Male	1 (5%)		
Female	19 (95%)		
Status of health		4.555	0.041
Good	13 (65%)		
Poor	7 (35%)		
Qualification		1.082	0.2
Primary or secondary education	9 (45%)		
Bachelors or masters	11 (55%)		
Marital status		1.261	0.257
Married	11 (55%)		
Unmarried	9 (45%)		
Experience		5.463	0.009
Less than 3 years	9 (45%)		
3-5 years	6 (30%)		
6-10 years	4 (20%)		
More than 10 years	1 (5%)		
Job position		0.174	0.665
Nurse	12 (60%)		
Chief nurse	8 (40%)		
Monthly income		0.537	0.454
Less than Rs 50,000	13 (65%)		
More than Rs 50,000	7 (35%)		
Resilience score	51.28 ± 10.35	4.140	<0.001
Social support score	23.30 ± 5.46	3.210	0.001

Table 2: Multivariate Analysis

Variable	B	S.E.	Wald	P	OR (95% CI)
Burnout score	0.693	0.238	8.198	0.003	1.991 (1.238-3.175)
Health status	1.032	1.927	0.279	0.600	2.793 (0.057-122.0.64)
Experience	-0.001	0.794	<0.001	1.0	1.0 (0.209-4.672)
Age	0.496	0.283	2.776	0.099	1.518 (0.923-2.869)
Resilience score	-0.355	0.130	7.111	0.010	0.712 (0.546-0.908)
Social support scale	-0.288	0.186	2.484	0.121	0.763 (0.547-1.061)
Constant	-27.539	15.254	3.101	0.077	<0.001

Discussion

PTSD is a mental health condition developed as a result of trauma and catastrophic situations. In the healthcare space, mortality, and morbidity experienced by the service providers leaves them traumatized. ICU nurses often have bad mental health due to excessive workload, constant exposure to emergencies, and interpersonal conflicts. This study was conducted to evaluate the incidence and risk factors of PTSD in ICU nurses. The results showed a high prevalence of PTSD which was associated with health status, age, experience, resilience, and social support with burnout as an independent risk factor.

The incidence of PTSD was 20% in the present study with a mean score was 30.68 ± 10.16, mean re-experiencing score of 10.48 ± 3.91, hypervigilance score of 10.02 ± 3.27, and avoidance score of 13.30 ± 3.94. These findings relate to recent studies conducted by other authors (5, 6). Latest research indicated a high prevalence of burnout in nurses especially after the pandemic due to a shortage of medical staff. (7). In the present study, the nurses with PTSD had significantly high overall burnout scores of 57.71 ± 7.07, 9.64 ± 2.45 for depersonalization, 23.53 ± 3.72 for exhaustion, and 26.71 ± 3.39 for personal accomplishment as compared to non-PTSD nurses. Burnout was also an independent risk factor indicating that there was a strong association between PTSD and burnout dimensions. Other studies have also verified the correlation between PTSD and burnout in nurses. (8-10).

The participants differed significantly concerning sex, qualification, job title, marital status, and income (p>0.05), which is different from previous

studies as it has been reported that PTSD is linked to familial and mental and physical health. (9) Similarly, women are more prone to express their feelings and feel deeply, hence more likely to experience PTSD (11). The insignificance of gender as a risk factor may be due to the inclusion of a small number of males. People with higher education have also been reported to deal with stress in a better way and have less risk of developing PTSD, however, other studies deny this connection like our study which may be because almost all the nurses are highly qualified and fit the professional requirements (12). PTSD is also more likely in divorced or separated people than those who are happily married or engaged (13). Job title and income were not associated with PTSD which is similar to other studies (14).

There were significant differences between health status, experience, age, resilience score, and social support score in our study with resilience being a protective factor of PTSD. Unhealthy nurses experience fatigue and stress and are unable to handle the workload and emergencies efficiently, hence are more susceptible to PTSD. (15). In the present study nurses with 5 years or less experience were more likely to develop PTSD, which may be due to inexperience in the ICU environment and excessive workload. Older nurses also have a higher prevalence of PTSD because age can affect the strength and tolerance of a person, therefore, the traumatic events impact their quality of life.

Our study has some limitations. The small sample size with unequal distribution of gender, impacted the study findings.

Conclusion

There is a high prevalence of PTSD among ICU nurses with burnout as an independent risk factor and resilience as a protective risk factor.

Declarations

Data Availability statement

All data generated or analyzed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department concerned. (IRBEC-MMNCS-0477-24)

Consent for publication

Approved

Funding

Not applicable

Conflict of interest

The authors declared the absence of a conflict of interest.

Author Contribution

NR, AB (Post RN BSN Final Year)
Manuscript drafting, Study Design,
Review of Literature, Data entry, Data analysis, and drafting article.
RM, NS (Post RN BSN Final Year)
Conception of Study, Development of Research Methodology Design
Study Design, manuscript review, critical input.

All authors reviewed the results and approved the final version of the manuscript. They are also accountable for the integrity of the study.

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