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SOCIO-DEMOGRAPHIC DETERMINANTS OF POSTTRAUMATIC STRESS DISORDER SYMPTOM SEVERITY AMONG INTENSIVE CARE UNIT HEALTHCARE PROFESSIONALS IN BUI DIVISION, CAMEROON

Dr. Siver Kibuh PhD

Clinical Psychologist

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ABSTRACT

This study examined the association between socio-demographic characteristics and posttraumatic stress disorder (PTSD) symptom severity among intensive care unit (ICU) healthcare professionals in the conflict-affected, resource-constrained context of Bui Division, Cameroon. In a cross-sectional study of 134 ICU professionals (nurses, physicians, and support staff), PTSD symptoms were assessed using the PTSD Checklist for DSM-5 (PCL-5). The prevalence of probable PTSD was exceptionally high (94.8%), with a mean PCL-5 score of 42.22 (SD = 5.55) significantly above the clinical threshold. Inferential analysis using a General Linear Model found no statistically significant associations between PTSD symptom severity and any of the examined socio-demographic variables, including age, gender, marital status, professional role, length of ICU experience, and working hours (all $p > .05$, partial $\eta^2 \leq .014$). The findings indicate uniformly severe PTSD symptoms across the ICU workforce, suggesting that in high-stress, fragile contexts, pervasive occupational and environmental stressors may overwhelm individual socio-demographic risk or protective factors. This underscores the necessity for system-wide mental health interventions and support structures targeting all ICU personnel in such settings, rather than selectively focused strategies.

KEYWORDS: posttraumatic stress disorder, PTSD, intensive care unit, healthcare workers, Cameroon, socio-demographic characteristics, occupational stress, conflict-affected setting

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INTRODUCTION

Background and Rationale

Intensive care unit (ICU) healthcare professionals operate in high-stakes environments where rapid, life-or-death decisions are routine. Exposure to patient suffering, frequent mortality, and moral dilemmas contributes to elevated stress levels, increasing the risk of posttraumatic stress disorder (PTSD) among these professionals (Roger et al., 2024; Hovland et al., 2023). PTSD manifests through intrusive memories, hypervigilance, and emotional numbing, often exacerbated by burnout and moral distress in resource-limited settings (Pool et al., 2024; Abdelbaky & Eldelpshany, 2024). Research underscores that the ICU environment uniquely amplifies the impact of occupational trauma due to cumulative exposure, ethical challenges, and insufficient recovery time (Gabra et al., 2022; van Mol, 2015). Consequently, ICU staff often exhibit higher PTSD prevalence than other healthcare workers (Sahebi et al., 2021; Laurent et al., 2021), highlighting the urgent need to examine factors that modulate symptom severity within this population.

Socio-demographic characteristics are increasingly recognized as critical determinants of PTSD severity. Variables such as age, gender, marital status, professional experience, and job role influence both exposure to stressors and coping capacity (Hovland et al., 2023; Biresaw & Gebeyehu, 2021). Younger professionals often report higher PTSD symptom severity due to limited exposure to traumatic events and underdeveloped coping mechanisms, whereas gendered responsibilities, particularly for women with caregiving roles, may exacerbate vulnerability to stress and emotional exhaustion (Pool et al., 2024; Gabra et al., 2022). Marital status and family obligations can further compound psychological strain, influencing the intensity of PTSD symptoms among ICU personnel (Roger et al., 2024). These findings suggest that socio-demographic factors interact with occupational stressors to shape PTSD outcomes, necessitating research tailored to specific ICU contexts.

Global and Regional Context

Globally, studies have shown that ICU healthcare professionals are disproportionately affected by PTSD relative to the general population. Prevalence rates range from 13% to 36%, depending on the setting and population studied (Andhavarapu et al., 2022; Sahebi et al., 2021). High-intensity work environments, insufficient staffing, and exposure to repeated trauma events have been identified as primary contributors to these rates (Saladino et al., 2022; Laurent et al., 2021). Socio-demographic variations appear to modulate symptom severity. For example, younger and female ICU staff often report heightened vulnerability, reflecting a combination of biological, psychological, and societal influences (Pool et al., 2024; Biresaw & Gebeyehu, 2021). Regional disparities also exist, with limited studies in low- and middle-income countries (LMICs) highlighting greater psychological burden due to resource constraints and systemic challenges (Tesfaye et al., 2024; Mbazzi et al., 2021).

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In sub-Saharan Africa, PTSD prevalence among healthcare workers ranges widely, from approximately 12% to 85%, influenced by conflict exposure, healthcare infrastructure, and occupational stress (Tesfaye et al., 2024). ICU-specific data remain sparse, but existing evidence indicates that high-intensity hospital units disproportionately affect mental health, particularly for those in direct patient care roles (Ntlantsana et al., 2021; van Mol, 2015). Socio-demographic determinants, such as gender and professional experience, further influence symptom severity in these contexts (Gabra et al., 2022; Biresaw & Gebeyehu, 2021), suggesting that interventions must account for individual differences alongside systemic factors.

Local Context – Cameroon

Cameroon presents unique challenges for ICU healthcare professionals. Systemic constraints, including limited staffing, scarce resources, and sociopolitical instability, compound the psychological toll of high-acuity patient care (United Nations Office for the Coordination of Humanitarian Affairs [UNOCHA], 2024; Niba et al., 2022). ICU personnel in conflict-affected regions face compounded risks due to ongoing insecurity, threats to healthcare facilities, and resource scarcity, which exacerbate PTSD symptom severity (UNOCHA, 2024; Koenen et al., 2017). Socio-demographic variables intersect with these occupational and environmental stressors. For instance, younger professionals and women may experience higher PTSD symptom severity due to limited experience and caregiving responsibilities (Pool et al., 2024; Roger et al., 2024). The interplay between individual characteristics and systemic pressures underscores the need to examine socio-demographic determinants of PTSD within the Cameroonian ICU context.

Research Gap and Objective

Although international and regional studies highlight socio-demographic influences on PTSD, localized research in Cameroon is limited. Existing literature primarily offers anecdotal or generalized insights into ICU mental health, leaving the specific role of socio-demographic factors largely unexplored (Tesfaye et al., 2024; UNOCHA, 2024). Understanding how characteristics such as age, gender, marital status, and professional experience shape PTSD symptom severity is critical for developing targeted interventions and support systems. The current study aims to fill this gap by examining the influence of socio-demographic characteristics on PTSD severity among ICU healthcare professionals in selected hospitals in Bui Division, Cameroon, providing evidence to inform policy, clinical practice, and occupational mental health strategies.

THEORETICAL FRAMEWORK

Overview of the Theoretical Framework

The present study is anchored in psychological theories that explain how repeated trauma exposure, indirect stress transmission, and individual appraisal processes contribute to the development and severity of posttraumatic stress disorder among healthcare professionals. ICU settings expose professionals to

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persistent traumatic stimuli, including patient mortality, ethical dilemmas, and prolonged stress, which interact with socio-demographic characteristics to shape psychological vulnerability and resilience (Roger et al., 2024; Sahebi et al., 2021). The framework integrates the Adaptive Information Processing model, Vicarious Trauma Theory, and the Transactional Model of Stress and Coping to explain variations in PTSD symptom severity among ICU healthcare professionals in resource-constrained settings.

Adaptive Information Processing Model

The Adaptive Information Processing (AIP) model explains PTSD as a consequence of inadequately processed traumatic memories stored in maladaptive neural networks. Traumatic experiences become dysfunctionally encoded when stress overwhelms the brain's innate capacity for adaptive integration, resulting in persistent psychological distress (Shapiro, 2014). ICU healthcare professionals encounter repeated trauma through exposure to critical illness, patient death, and emergency decision-making, which increases the likelihood of cumulative maladaptive memory storage (Andhavarapu et al., 2022; Laurent et al., 2021). Each unprocessed experience compounds the rigidity of trauma networks, intensifying symptom severity over time.

Socio-demographic characteristics influence how traumatic information is processed and stored. Younger healthcare professionals and those with fewer years of experience may have less developed cognitive frameworks for integrating traumatic experiences, increasing susceptibility to maladaptive encoding (Roger et al., 2024; Hovland et al., 2023). Gender differences further affect memory processing, as female healthcare professionals often experience heightened emotional engagement and caregiving expectations, which may amplify trauma encoding and emotional distress (Pool et al., 2024; Biresaw & Gebeyehu, 2021). The AIP model therefore provides a neuropsychological explanation for why PTSD symptom severity varies across socio-demographic groups within ICU populations.

Evidence from high-pressure hospital environments supports the AIP proposition that systemic stressors interfere with adaptive processing. Resource shortages, high workload, and limited recovery time overwhelm cognitive integration mechanisms, leading to persistent symptom activation (Saladino et al., 2022; Carmassi et al., 2022). In low-resource contexts such as Cameroon, chronic exposure to stressors further constrains adaptive processing, particularly among professionals with limited institutional support (Tesfaye et al., 2024; UNOCHA, 2024). The AIP model thus explains how both individual characteristics and environmental pressures contribute to differences in PTSD severity.

Vicarious Trauma Theory

Vicarious Trauma Theory explains psychological distress as a cumulative outcome of prolonged empathetic engagement with others' suffering. ICU healthcare professionals experience indirect trauma through sustained exposure to critically ill patients, grieving families, and repeated end-of-life care, which alters cognitive schemas related to safety, control, and meaning (van Mol, 2015; Figley, 1995). This

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cumulative exposure erodes emotional resilience and increases vulnerability to PTSD symptoms, particularly when recovery opportunities are limited.

Socio-demographic factors shape susceptibility to vicarious trauma. Nurses and frontline staff often report more severe PTSD symptoms due to closer patient contact and sustained emotional labor (Roger et al., 2024; Gabra et al., 2022). Female healthcare professionals frequently demonstrate higher symptom severity, reflecting the interaction between professional caregiving roles and societal expectations of emotional availability (Pool et al., 2024; Biresaw & Gebeyehu, 2021). Marital and family responsibilities further intensify emotional burden, as fear of transmitting illness and balancing domestic roles exacerbate psychological strain (Hovland et al., 2023).

Contextual stressors intensify vicarious trauma in resource-limited and conflict-affected settings. Healthcare professionals in Cameroon operate amid systemic shortages, insecurity, and sociopolitical instability, which amplify indirect trauma exposure and limit psychological recovery (UNOCHA, 2024; Niba et al., 2022). Continuous exposure to both patient suffering and external threats compounds emotional exhaustion, increasing PTSD symptom severity across vulnerable socio-demographic groups. Vicarious Trauma Theory therefore explains how cumulative occupational exposure interacts with personal characteristics to deepen psychological distress.

Transactional Model of Stress and Coping

The Transactional Model of Stress and Coping conceptualize PTSD as an outcome of cognitive appraisal processes and perceived coping capacity. Stress responses emerge when individuals evaluate environmental demands as exceeding their available resources (Lazarus & Folkman, 1984). ICU environments present persistent stressors that challenge professionals' sense of control, competence, and emotional safety, leading to maladaptive stress appraisals (Abdelbaky & Eldelpshany, 2024; Sahebi et al., 2021).

Socio-demographic characteristics influence both primary appraisal of threat and secondary appraisal of coping resources. Younger and less experienced healthcare professionals often report heightened PTSD severity due to limited professional confidence and underdeveloped coping strategies (Roger et al., 2024; Hovland et al., 2023). Female professionals may experience compounded stress due to dual professional and domestic responsibilities, which reduces perceived coping capacity (Pool et al., 2024; Gabra et al., 2022). Marital status and social support further mediate appraisal processes, with emotional support acting as a protective factor against symptom escalation (Biresaw & Gebeyehu, 2021).

Systemic constraints weaken coping resources in low-income settings. Limited access to mental health services, staffing shortages, and organizational instability diminish perceived control and intensify stress appraisals (Tesfaye et al., 2024; UNOCHA, 2024). Ineffective coping responses increase the risk of

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chronic PTSD and comorbid conditions, including burnout and depression, which further impair adaptive functioning (Parcesepe et al., 2022; van Mol, 2015). The Transactional Model thus explains variability in PTSD severity as a function of socio-demographic differences in appraisal and coping capacity.

Integrative Application of the Framework

The integration of the AIP model, Vicarious Trauma Theory, and the Transactional Model of Stress and Coping provides a comprehensive explanation of PTSD symptom severity among ICU healthcare professionals. The AIP model accounts for neuropsychological mechanisms of trauma processing. Vicarious Trauma Theory explains cumulative emotional exposure. The Transactional Model clarifies individual differences in stress appraisal and coping. Together, these theories elucidate how socio-demographic characteristics interact with occupational stressors to shape PTSD severity in ICU settings (Roger et al., 2024; Tesfaye et al., 2024).

This integrated framework is particularly relevant in Cameroon, where healthcare professionals face intersecting clinical, social, and political stressors. Understanding PTSD severity through this lens allows for nuanced interpretation of demographic vulnerabilities and informs targeted occupational mental health strategies. The framework therefore provides a robust conceptual foundation for examining socio-demographic influences on PTSD severity among ICU healthcare professionals in Bui Division.

METHODS

Study Design

The study employed a quantitative, cross-sectional analytical design grounded in a positivist paradigm. This design enabled objective examination of variations in PTSD symptom severity across socio-demographic groups using standardized measurement and statistical comparison. Positivism was appropriate because it assumes that psychological phenomena can be observed, quantified, and analyzed independently of the researcher through empirical methods (Alele & Malau-Aduli, 2023). The design supported the research objective by allowing systematic evaluation of whether socio-demographic characteristics were associated with differences in baseline PTSD severity among ICU healthcare professionals. The analytical focus remained descriptive and inferential rather than causal. The design facilitated comparison of mean PTSD symptom scores across demographic and occupational categories without manipulating exposure or treatment conditions. This approach aligned with the objective of identifying potential risk and vulnerability patterns within the ICU workforce rather than testing intervention effects.

Study Setting

The study was conducted in two level-five hospitals located in Bui Division, Northwest Cameroon. These facilities operated ICUs that managed critically ill patients under conditions of persistent resource constraints and regional instability. The hospitals served as major referral centers and employed

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multidisciplinary ICU teams that included physicians, nurses, and auxiliary staff. The regional context was characterized by prolonged sociopolitical conflict, which compounded occupational stress and increased exposure to traumatic events among healthcare workers (Mbazzi et al., 2021). The ICU environment involved high patient acuity, extended working hours, frequent encounters with mortality, and limited mental health support services. These contextual factors made the setting appropriate for examining socio-demographic variation in PTSD symptom severity. The shared structural and operational characteristics of the two hospitals supported comparability of participant experiences across sites.

Participants

Participants consisted of healthcare professionals working in ICUs at the selected hospitals. Eligible participants included nurses, physicians, and auxiliary staff who were directly involved in ICU service delivery. Inclusion required a minimum of six months of continuous ICU employment to ensure sufficient exposure to occupational stressors relevant to trauma-related symptoms. Participation was voluntary and contingent upon provision of informed consent. Exclusion criteria were applied to reduce confounding influences. Healthcare professionals who were on extended leave, who had not worked in the ICU during the preceding six months, or who held concurrent locum positions in other hospitals were excluded. Individuals who were already receiving treatment for PTSD or other psychiatric conditions were also excluded to avoid distortion of baseline symptom severity. These criteria ensured that observed variations in PTSD symptoms reflected occupational and socio-demographic differences rather than treatment effects or heterogeneous work environments (Taherdoost, 2016).

Sample Size and Sampling

The target population comprised approximately 200 ICU healthcare professionals across the two hospitals. Sample size estimation followed Cochran's formula for finite populations, assuming a 95% confidence level, a 5% margin of error, and an estimated PTSD prevalence of 50% to maximize variability (Israel, 1992; Cochran, 1977). The adjusted minimum sample size was calculated as 132 participants, with a final sample of 134 recruited to account for rounding and potential non-response. Sampling employed a stratified random approach to ensure proportional representation of professional categories. Participants were stratified by role as nurses, physicians, or auxiliary staff, and random selection occurred within each stratum. This approach enhanced representativeness and reduced selection bias while allowing meaningful comparison of PTSD symptom severity across occupational groups (Creswell & Creswell, 2018). Equal distribution across study sites further supported balance in demographic and contextual exposure.

Measures

Data were collected using a structured, self-administered questionnaire composed of standardized instruments. Socio-demographic characteristics were assessed using a researcher-designed form that

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captured age, gender, marital status, professional role, years of ICU experience, and average weekly working hours. These variables were selected based on evidence linking demographic and occupational factors to trauma-related mental health outcomes among healthcare workers (Deltour et al., 2023). PTSD symptom severity was measured using the PTSD Checklist for DSM-5 (PCL-5). The instrument consists of 20 items rated on a five-point Likert scale ranging from 0 to 4, with higher total scores indicating greater symptom severity. The PCL-5 has demonstrated excellent internal consistency, with Cronbach's alpha values exceeding .90 across diverse populations (Blevins et al., 2015). Prior use in African healthcare settings supported its cultural applicability and relevance (Tesfaye et al., 2024).

Data Collection Procedure

Ethical approval was obtained from relevant institutional and regulatory bodies prior to data collection. Hospital administrators granted permission, and ICU department heads facilitated access to eligible staff. Participants received verbal and written explanations outlining the study purpose, procedures, potential risks, and confidentiality protections. Informed consent was obtained before questionnaire administration, consistent with ethical principles of autonomy and transparency (Resnik, 2020). Data collection occurred during scheduled periods that minimized disruption to clinical duties through forms disseminated online through Google Forms. Participants completed the questionnaires individually in a quiet setting within the hospital. Screening for PTSD symptoms was conducted using the PCL-5 at baseline, and only baseline data were used for the present analysis. Completed questionnaires were coded and stored securely to preserve anonymity. No identifying information was included in the analytic dataset.

Data Analysis

Data were entered into SPSS version 26 for cleaning and analysis. Descriptive statistics were computed to summarize socio-demographic characteristics and overall PTSD symptom severity. Continuous variables were described using means, standard deviations, and confidence intervals, while categorical variables were summarized using frequencies and percentages. Assumptions of normality and homogeneity of variance were evaluated using graphical methods and Levene's test (Field, 2018).

Inferential analysis addressed the research objective by examining whether PTSD severity varied across socio-demographic groups. A General Linear Model univariate analysis was conducted with PCL-5 total score as the dependent variable and socio-demographic characteristics entered as fixed factors. This approach allowed simultaneous evaluation of multiple predictors while controlling for shared variance (Tabachnick & Fidell, 2019). Effect sizes were reported using partial eta squared to aid interpretation. Statistical significance was set at $p < .05$, two-tailed.

The study tested the hypothesis that PTSD symptom severity differs significantly across socio-demographic characteristics among ICU healthcare professionals. It was hypothesized that mean PTSD

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severity scores, as measured by the PTSD Checklist for DSM-5, would vary as a function of gender, age group, marital status, professional role, length of ICU experience, and working hours. The null hypothesis stated that no statistically significant differences in PTSD symptom severity would be observed across these socio-demographic categories.

RESULTS

Sample Characteristics

The analytical sample comprised 134 ICU healthcare professionals. Gender representation was evenly distributed, with equal numbers of male and female participants. This balance supported unbiased comparison of PTSD symptom severity by gender. Participants were predominantly young to middle-aged adults. Most respondents were aged between 26 and 35 years, followed by those aged 36 to 45 years. Very few participants were younger than 25 years. Marital status indicated that just over half of the participants were married, while a substantial proportion were single. Divorced and widowed participants represented small minorities.

Professional roles reflected typical ICU staffing patterns. Nurses constituted the largest group, followed by support staff and physicians. Working hours showed moderate variability across the sample, with participants distributed relatively evenly across below-average, average, and above-average workload categories. ICU experience was concentrated within the first ten years of service, with nearly all participants reporting between one and ten years of ICU practice. Table 1 presents the full socio-demographic profile of the study participants.

Table 1

Socio-Demographic Profile of ICU Healthcare Professionals (N = 134)

Variable	Category	n	%
Gender	Female	67	50.0
	Male	67	50.0
Age category	≤25 years	1	0.7
	26–35 years	77	57.5
	36–45 years	56	41.8
Marital status	Married	69	51.5
	Single	52	38.8
	Divorced	7	5.2
	Widowed	6	4.5
Professional role	Nurse	88	65.7
	Physician	20	14.9
	Support staff	26	19.4

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Variable	Category	n	%
Weekly working hours	Below average	47	35.1
	Average	48	35.8
	Above average	39	29.1
ICU experience	1–5 years	66	49.3
	6–10 years	65	48.5
	11–15 years	3	2.2

Note. Percentages reflect valid responses and may not total 100 due to rounding.

Prevalence of Probable PTSD

Baseline screening indicated an exceptionally high prevalence of trauma-related symptomatology. Nearly all participants met the clinical threshold for probable PTSD based on PCL-5 criteria. Only a small proportion of healthcare professionals scored below the cut-off, suggesting that PTSD was unlikely. This distribution demonstrated that clinically significant PTSD symptoms were widespread within the ICU workforce at baseline. The observed prevalence suggested that exposure to traumatic stressors was pervasive across demographic and occupational categories. PTSD symptoms appeared to affect the workforce broadly rather than being confined to a limited subgroup. Table 2 summarizes the distribution of probable PTSD classification at baseline.

Table 2

Baseline Prevalence of Probable PTSD Among ICU Healthcare Professionals

PTSD classification	n	%
Below clinical threshold	7	5.2
At or above clinical threshold	127	94.8
Total	134	100.0

Note. Probable PTSD was defined using a PCL-5 cut-off score of 33 or higher. Percentages are valid percentages.

Baseline PTSD Symptom Severity

Overall PTSD symptom severity was high across the sample. The mean PCL-5 score substantially exceeded the clinical threshold, with limited dispersion around the mean. Confidence intervals indicated a narrow range of average symptom severity, suggesting relative uniformity in distress levels across participants. Table 3 presents descriptive statistics for PTSD severity across all examined characteristics.

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Table 3

Baseline PTSD Symptom Severity (PCL-5 Total Scores) Across Socio-Demographic Categories

Characteristic	Group	n	Mean	SD	95% CI
Overall	—	134	42.22	5.55	[41.27, 43.17]
Age	≤35 years	90	41.79	5.31	[40.60, 42.99]
	≥36 years	44	42.82	5.88	[41.25, 44.39]
Marital status	Married	69	41.88	5.78	[40.49, 43.27]
	Unmarried	65	42.58	5.32	[41.27, 43.90]
ICU experience	≤5 years	66	42.33	6.24	[40.80, 43.87]
	≥6 years	68	42.12	4.84	[40.95, 43.29]
Gender	Female	67	41.97	5.66	[40.59, 43.35]
	Male	67	42.48	5.48	[41.14, 43.81]
Role	Nurse	88	42.19	5.68	[40.99, 43.40]
	Physician	20	40.85	5.41	[38.32, 43.38]
	Support staff	26	43.38	5.16	[41.30, 45.47]
Working hours	Below average	47	42.30	5.63	[40.64, 43.95]
	Average	48	42.08	5.57	[40.47, 43.70]
	Above average	39	42.31	5.58	[40.50, 44.12]

Note. PTSD symptom severity was assessed using the PCL-5. Higher scores indicate greater symptom severity. CI = confidence interval; SD = standard deviation.

Comparisons across socio-demographic categories revealed only minor variations in mean PTSD scores. Older participants reported slightly higher average scores than younger participants. Unmarried participants showed marginally higher symptom severity than married participants. Male participants reported slightly higher mean scores than female participants. Differences across professional roles were modest, with support staff reporting the highest mean scores and physicians reporting the lowest. ICU experience length and working hours showed almost identical mean scores across categories, indicating minimal variation by tenure or workload. Substantial overlap was observed across confidence intervals for all groups. These findings suggested that PTSD symptom severity was consistently elevated across socio-demographic strata.

Assumption Testing for Inferential Analysis

Assessment of statistical assumptions indicated violation of the homogeneity of variance assumption. Levene's test for equality of error variances was statistically significant, indicating unequal variance in PTSD scores across socio-demographic groups. This finding suggested heterogeneity in score dispersion rather than differences in central tendency. Despite this violation, inferential testing proceeded using the General Linear Model, which is robust to moderate departures from variance homogeneity in balanced

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designs. Effect sizes were emphasized to support cautious interpretation. Results of Levene's test are presented in Table 4.

Table 4

Test of Homogeneity of Variance for Baseline PTSD Scores

Outcome variable	Levene statistic	df_1	df_2	p
PTSD baseline score	2.60	37	58	.001

Note. A significant value indicates violation of the homogeneity of variance assumption.

Influence of Socio-Demographic Characteristics on PTSD Severity

Inferential analysis examined whether socio-demographic characteristics predicted baseline PTSD symptom severity. The General Linear Model assessed the unique contribution of age group, marital status, professional role, ICU experience length, working hours, and gender while controlling for shared variance among predictors. Table 5 presents the full results of the General Linear Model analysis.

Table 5

General Linear Model Results for Socio-Demographic Predictors of Baseline PTSD Severity

Predictor	df	F	p	Partial η^2
Age group	1, 58	0.003	.960	.000
Marital status	1, 58	0.001	.971	.000
Professional role	2, 58	0.410	.666	.014
ICU experience	1, 58	0.201	.656	.003
Working hours	2, 58	0.259	.773	.009
Gender	1, 58	0.123	.727	.002
Corrected model	75, 58	0.773	.854	.500

Note. Partial eta squared values represent the proportion of variance uniquely explained by each predictor after adjustment for other variables in the model.

Results indicated that none of the examined socio-demographic variables significantly predicted PTSD symptom severity. Age group showed no association with baseline PTSD scores. Marital status demonstrated no effect. Professional role did not significantly explain variation in symptom severity. ICU experience length and working hours showed no meaningful influence on PTSD scores. Gender similarly did not predict symptom severity. Effect size estimates were uniformly small. Partial eta squared values indicated negligible explanatory power for each predictor. These findings suggested that PTSD symptom

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severity was not meaningfully differentiated by socio-demographic characteristics within the sample. The null hypothesis was retained.

DISCUSSION

Summary of Key Findings

This study examined whether socio-demographic characteristics were associated with baseline PTSD symptom severity among ICU healthcare professionals. Findings indicated a uniformly high level of PTSD symptoms across the sample. Nearly all participants met the clinical threshold for probable PTSD at baseline. Mean symptom severity scores exceeded established cut-off values by a wide margin, indicating substantial psychological distress. These results underscore the pervasive burden of trauma-related symptoms within the ICU workforce in this setting.

Inferential analysis demonstrated that socio-demographic characteristics did not significantly predict PTSD symptom severity. Age, gender, marital status, professional role, length of ICU experience, and working hours showed no meaningful associations with baseline PTSD scores. Effect sizes were negligible across all predictors. These findings suggest that PTSD severity was not differentiated by individual demographic or occupational characteristics. Symptom severity appeared instead to reflect shared exposure to intense occupational and contextual stressors within the ICU environment. The null hypothesis was therefore retained. PTSD symptom severity remained consistently elevated across socio-demographic groups. This pattern highlights the collective nature of psychological risk among ICU healthcare professionals in high-stress and resource-constrained settings.

Comparison with Existing Literature

The high prevalence of probable PTSD observed in this study aligns with prior evidence documenting elevated trauma exposure among healthcare professionals working in critical care environments. Previous studies have reported similarly high rates of PTSD symptoms among ICU staff, particularly in contexts characterized by high patient mortality, limited resources, and chronic occupational stress (Tesfaye et al., 2024). The findings reinforce the view that ICU work itself constitutes a potent and sustained traumatic stressor.

The absence of significant socio-demographic predictors contrasts with some studies conducted in high-income settings, where gender, professional role, or years of experience have been associated with differential PTSD risk. However, the present findings are consistent with research suggesting that extreme and prolonged stress exposure may overwhelm individual-level protective or vulnerability factors (Mbazzi et al., 2021). In such contexts, occupational trauma may exert a homogenizing effect on psychological outcomes.

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Comparable findings have been reported in studies of healthcare workers exposed to armed conflict, epidemics, or humanitarian crises. These studies indicate that when stressors are intense and pervasive, socio-demographic distinctions become fewer salient predictors of mental health outcomes (Deltour et al., 2023). The present results extend this evidence by demonstrating a similar pattern among ICU healthcare professionals operating within a conflict-affected region.

Contextual Interpretation

The findings must be interpreted within the sociopolitical and healthcare context of Northwest Cameroon. Prolonged regional instability has disrupted health systems and increased trauma exposure among both patients and healthcare providers. ICU professionals in this setting routinely confront critically ill patients, preventable deaths, and ethical dilemmas under conditions of resource scarcity. Such exposures likely contribute to cumulative psychological strain that transcends individual demographic differences (Mbazzi et al., 2021).

Institutional constraints may further exacerbate distress. Limited access to mental health services, absence of structured psychological support, and high workload demands reduce opportunities for recovery and coping. These factors may explain why PTSD symptom severity remained uniformly high regardless of experience level or working hours. Prolonged exposure without adequate institutional buffering may erode the protective effects typically associated with seniority or professional role (Tesfaye et al., 2024).

The lack of gender differences in PTSD severity also warrants contextual consideration. In settings marked by shared exposure to violence, instability, and occupational trauma, gender-based vulnerability patterns observed elsewhere may not emerge. Psychological distress may instead reflect collective exposure to chronic stressors embedded within the broader socio-environmental context (Deltour et al., 2023).

Implications

The findings carry important implications for mental health policy and practice within critical care settings. Uniformly high PTSD symptom severity suggests that selective or demographically targeted interventions may be insufficient. System-wide mental health screening and support mechanisms are needed for all ICU healthcare professionals, regardless of role or background. Institutional responses should prioritize prevention and early identification of trauma-related symptoms. Routine psychological assessment, peer support structures, and accessible referral pathways may mitigate long-term psychological harm. Interventions should be embedded within the organizational framework rather than relying on individual help-seeking alone. At a policy level, the findings underscore the need to recognize occupational trauma among healthcare professionals as a public health concern. Investment in workforce mental health may enhance staff retention, quality of care, and system resilience in fragile healthcare contexts. Addressing PTSD among ICU professionals is therefore not only a clinical priority but also a structural imperative.

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Limitations

Four limitations should be considered when interpreting the findings of this study. The cross-sectional design limited the ability to infer temporal or causal relationships between socio-demographic characteristics and PTSD symptom severity. Associations were examined at a single time point, which constrained conclusions regarding symptom development or progression over time (Creswell & Creswell, 2018). Longitudinal patterns of trauma exposure and symptom persistence could not be assessed within this design framework.

Reliance on self-reported measures introduced the possibility of response bias. Participants may have underreported or overreported symptoms due to social desirability concerns, stigma related to mental health, or fear of professional repercussions (Mbazzi et al., 2021). Such factors are particularly salient in healthcare settings where psychological distress may be perceived as a sign of reduced professional competence. The use of a validated instrument mitigated this limitation but did not eliminate it entirely.

The sample was drawn from two level-five hospitals within a single region. Contextual factors such as sociopolitical instability, resource constraints, and institutional culture may limit the generalizability of findings to other healthcare settings (Deltour et al., 2023). ICU environments in more stable or better-resourced regions may exhibit different patterns of PTSD symptom severity and associated predictors.

Violation of the homogeneity of variance assumption represented an additional methodological limitation. Although the General Linear Model is robust to moderate variance heterogeneity, unequal dispersion of PTSD scores across groups may have reduced sensitivity to detect small effects (Field, 2018). This limitation may partly explain the absence of statistically significant socio-demographic predictors.

Finally, the analysis focused exclusively on socio-demographic characteristics. Psychological, organizational, and contextual variables such as coping strategies, exposure intensity, moral injury, and institutional support were not included. These unmeasured factors may play a more substantial role in shaping PTSD symptom severity than demographic attributes alone (Tesfaye et al., 2024).

RECOMMENDATIONS

Findings from this study highlight the need for comprehensive mental health strategies targeting ICU healthcare professionals. Uniformly high PTSD symptom severity across socio-demographic groups indicates that selective interventions based on role or background may be insufficient. Mental health screening should therefore be implemented routinely for all ICU staff as part of occupational health protocols. Healthcare institutions should prioritize the integration of psychological support services within critical care environments. Access to confidential counseling, peer support programs, and stress management interventions may help mitigate the cumulative impact of occupational trauma. Institutional

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acknowledgment of psychological risk may also reduce stigma and encourage help-seeking among healthcare professionals.

Policy-level action is also warranted. Workforce mental health should be recognized as a core component of health system resilience, particularly in conflict-affected and resource-limited settings. Investment in staff wellbeing may improve retention, reduce burnout, and enhance quality of patient care. Such investments are essential for sustaining critical care services under prolonged stress conditions. Future research should adopt longitudinal designs to examine changes in PTSD symptoms over time and to identify predictors of recovery or chronicity. Inclusion of organizational, psychosocial, and trauma-exposure variables may yield a more comprehensive understanding of PTSD risk among ICU professionals. Mixed-methods approaches may further enrich understanding by capturing lived experiences that quantitative measures alone cannot explain fully.

CONCLUSION

This study examined baseline PTSD symptom severity among ICU healthcare professionals and assessed whether socio-demographic characteristics influenced symptom levels. Findings demonstrated an exceptionally high prevalence of probable PTSD across the sample. Symptom severity remained uniformly elevated regardless of age, gender, marital status, professional role, length of ICU experience, or working hours. These results highlight the substantial psychological burden borne by ICU healthcare professionals working in high-stress and resource-constrained environments.

The absence of significant socio-demographic predictors suggests that PTSD symptom severity in this context is shaped more strongly by shared occupational and environmental stressors than by individual background characteristics. Repeated exposure to critically ill patients, frequent encounters with death, and sustained workload pressures likely contribute to cumulative psychological distress across the workforce. Such conditions may attenuate protective effects typically associated with experience, role seniority, or demographic factors.

Contextual factors unique to the study setting further inform interpretation of the findings. Prolonged sociopolitical instability and systemic resource limitations have intensified occupational stress within healthcare facilities. ICU professionals operate under persistent strain with limited institutional support for mental health needs. These conditions may explain the uniformly high PTSD symptom severity observed across the sample and underscore the role of structural determinants in shaping mental health outcomes.

The findings underscore the need to reconceptualize PTSD risk among ICU healthcare professionals as a collective occupational phenomenon rather than an individual vulnerability. System-wide approaches to mental health promotion, early identification, and psychological support are therefore essential.

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Addressing PTSD among critical care professionals is not only a matter of individual wellbeing but also a prerequisite for maintaining effective and resilient healthcare systems in fragile contexts.

This study therefore contributes evidence that PTSD symptom severity among ICU healthcare professionals is pervasive and largely independent of socio-demographic differentiation. The findings emphasize the central role of occupational and contextual stressors in shaping trauma-related outcomes. Recognition of this reality is critical for informing institutional policy, guiding mental health interventions, and safeguarding the sustainability of critical care services in high-risk environments.

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