

ASSESS THE LEVEL OF ANXIETY AMONG CRITICAL CARE NURSES IN TERTIARY CARE HOSPITALS PESHAWAR

Amjid Ali^{*1}, Syed Afzal Shah², Khuzair Khan³, Uzair Ahmad⁴, Muhammad Rafiq⁵, Shehzad Ahmad⁶, Shayan Taqdeer⁷, Ijaz Latif⁸^{*1}Assistant Professor: Farabi College of Nursing, MSN, MSc Psychology, BSN²Lecturer: Epidemiology & Biostatistics, MSN, MS Epidemiology & Biostatistics, BSN³Vice Principal: Himalya College of Nursing⁴MSN Scholar Khyber Medical University, MSN, BSN⁵RN Officer, Post RN BScN

BSN, Farabi College of Nursing (KMU Affiliated Institute)

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Corresponding Author: *

Syed Afzal Shah

Abstract

Introduction: Critical care nursing is widely recognized as one of the most stressful areas of healthcare due to the high demands, emotional burden, and responsibility associated with patient care. Persistent exposure to traumatic events, including frequent encounters with death, time pressures, and heavy workloads, contribute significantly to elevated anxiety levels among nurses. This study aimed to assess the level of anxiety among critical care nurses working in tertiary care hospitals in Peshawar, Pakistan, and to identify prevalent anxiety-related symptoms impacting their well-being and job performance.

Methodology: A descriptive cross-sectional study design was employed. The study was conducted in the adult Intensive Care Units (ICUs) of three tertiary care hospitals in Peshawar: Lady Reading Hospital, Khyber Teaching Hospital, and Hayatabad Medical Complex. A total of 97 registered nurses were selected through a convenience sampling technique. Data were collected using a validated, self-administered questionnaire comprising demographic information and 14 anxiety-related items rated on a 5-point Likert scale. Statistical analysis was performed using SPSS version 22.0, applying descriptive statistics to summarize the data.

Results: The findings revealed that a majority of nurses experienced **moderate levels of anxiety**, particularly in domains such as **anxious mood (44.3%)**, **tension (46.4%)**, **insomnia (44.3%)**, **respiratory (45.4%)**, **gastrointestinal (49.5%)**, and **behavioral symptoms (59.8%)**. Severe and very severe anxiety symptoms were present but less common. Demographic factors such as **age**, **gender**, **marital status**, and **education level** showed significant correlations with anxiety levels. Overall, 99% of the respondents reported experiencing some form of anxiety, with many symptoms clustering in the mild-to-moderate range.

Conclusion

This study demonstrates that critical care nurses in Peshawar face **moderate but widespread anxiety**, with symptoms spanning physical, emotional, and behavioral domains. The high prevalence of anxiety underscores the urgent need

for *targeted mental health interventions*, including stress management training, counseling services, and organizational support, to improve nurses' psychological well-being and safeguard patient care quality in high-stress environments.

INTRODUCTION

Anxiety is such a prevalent phenomenon that it's hard to believe anyone who claims to be completely immune to it. However, its exact nature and purpose are not entirely clear. Is it a sign of mental distress that only occurs in those who are not mentally healthy, or does it serve a beneficial purpose? Moreover, what do we mean when we say someone is anxious? Are we referring to a specific type of emotional experience? For instance, when someone mentions feeling anxious in crowds, worrying about a loved one's health, or eagerly anticipating a particular film, are they all describing the same feeling? It's worth exploring whether there's a common thread among these different uses of the term "anxious." (Rycroft, 2018)

1.0 Background

Stress and Anxiety arises when individuals face job demands and pressures that exceed their skills and resources, making it challenging for them to cope effectively. This can lead to various negative outcomes such as burnout, decreased job satisfaction, and both mental and physical health issues. Research indicates a link between work-related stress and conditions like cardiovascular problems, gastrointestinal disorders, musculoskeletal issues, anxiety, depression, fatigue, insomnia, and even substance abuse. Additionally, it can impact personal relationships and social interactions. Various aspects of the work environment, including working conditions, interpersonal relationships, and organizational factors, contribute to stress among nursing professionals. Unmanaged stress can lead to emotional and behavioral disturbances, while effectively managed stress can enhance confidence, motivation, productivity, and overall well-being. Signs of stress manifest in changes in behavior, feelings, thinking patterns, and physical symptoms. (Ramdan, 2019)

Nurses are integral to Australia's healthcare system, providing care, rehabilitation, support, and education to patients and families. Despite their essential role,

nursing is recognized as a stressful occupation. Nurses face numerous stressors such as long hours, time constraints, and lack of support, which can impact their mental health and quality of life. This ongoing stress may lead to psychological and physical symptoms, including low self-esteem, fatigue, cardiovascular issues, and maladaptive behaviors like substance abuse. (Qayyum, Khalil, Jawad, & Ashraf, 2020) Depression and anxiety are prevalent among nurses globally, with rates varying across different countries. Understanding the prevalence and predictors of these mental states is crucial for creating supportive work environments and promoting employee well-being. Studies have shown varying rates of depressive symptoms, anxiety, and stress among nurses, with factors like job satisfaction, workload, and sleep disturbances being common predictors of these mental health issues. (Maharaj, Lees, & Lal, 2019)

Encountering death is a significant concern for humans, influenced by personal experiences and cultural beliefs. Nurses and other healthcare workers, exposed to sickness and trauma, may experience death anxiety, a negative emotional state triggered by awareness of mortality. Various factors like age, religious beliefs, and occupational stressors can influence the level of death anxiety in healthcare providers. Despite increasing attention to burnout and compassion fatigue among nurses caring for dying patients, research on the role of death anxiety in contributing to these stressors is limited, especially in diverse healthcare settings.

This review aims to explore death anxiety and management strategies among healthcare providers across different cultures and healthcare environments. Nurses globally play critical roles in preventing death and supporting patients and families through end-of-life decisions. However, they may experience anxiety and stress related to their work, particularly in environments like emergency rooms where workload demands may compromise end-of-life care. Death anxiety encompasses emotional,

cognitive, and experiential aspects and can significantly impact nurses' attitudes, empathic concern, and quality of care provision (Zahid et al., 2022).

While nurses may have positive intentions to provide quality care to dying patients, fears related to death and experiences of grief can heighten anxiety and affect their ability to cope with work-related stressors. Therefore, it is crucial to identify strategies to mitigate the negative consequences of death anxiety in the nursing profession. Understanding the factors contributing to death anxiety and implementing interventions to address them can help alleviate stress among nurses, improve patient care outcomes, and safeguard nurses' well-being. Lehto and Stein's review highlights that developmental and sociocultural factors influence the expression of death anxiety, with life experiences shaping attitudes towards death. While fear of death is common, acknowledging and addressing death anxiety is essential due to its significant behavioral and emotional consequences. By examining the existing literature on death anxiety in nurses and identifying effective coping strategies, this paper seeks to provide insights into mitigating the adverse effects of death anxiety-related work stress and promoting nurses' resilience and well-being in challenging healthcare environments. (Nia, Lehto, Ebadi, & Peyrovi, 2016)

Clinical nursing education plays a vital role in equipping nursing students with the necessary competencies for their professional roles. It allows them to apply theoretical knowledge in real-life nursing scenarios, develop critical thinking skills, and enhance communication and patient care abilities. However, challenges such as faculty shortages, increasing student enrollments, and limited clinical placement options make providing optimal clinical experiences difficult for nurse educators. To address these challenges, alternative teaching methods like simulation-based activities, particularly high-fidelity simulation (HFS), have become essential. While there is sample literature evaluating the impact of HFS on nursing students' learning outcomes, there is a lack of comprehensive reviews examining its effects on students' anxiety. Therefore, this systematic review aims to explore peer-reviewed articles that investigate the influence of HFS on nursing students' anxiety and

self-confidence during their education. (Labrague, McEnroe-Petitte, Bowling, Nwafor, & Tsaras, 2019) Nursing, recognized as one of the most stressful professions globally, amplifies stress levels for nursing students as they navigate academic, professional, and personal challenges. Beyond traditional classroom learning, nursing students must master skills in laboratory and clinical settings and undergo rigorous evaluations comprising theory and practical exams, creating a demanding learning environment. Elevated stress levels among nursing students correlate with deficits in professional knowledge and skills, compromising patient care and clinical performance. With the recent introduction of undergraduate nursing degree programs in Sri Lanka's national university system, nursing education is undergoing a transition from diploma to degree programs. Consequently, nursing undergraduates in Sri Lanka face additional challenges alongside the inherent stressors of nursing education. However, there is limited evidence regarding mental health issues among university nursing students in Sri Lanka. (Rathnayake & Ekanayaka, 2016)

Several factors could contribute to this finding. Firstly, the ongoing nationwide lockdown may have helped control community transmission, thereby reducing the patient load and associated stress. Additionally, Indian doctors may have developed resilience through their professional experiences, including rigorous medical training, long working hours, burnout, and routine exposure to infectious diseases even before the pandemic. Public sector hospitals in India typically handle a large number of cases with limited staff and infrastructure. (Jan, Naz, Ahmad, & Zamin, 2021)

The emergence of the novel coronavirus, SARS-CoV-2, causing COVID-19, has placed immense pressure on healthcare systems worldwide. HCPs are facing challenges such as extended working hours, shortages of personal protective equipment and medications, and separation from family. Previous outbreaks like SARS and MERS have shown that frontline medical staff experienced high levels of stress and psychological symptoms. Concerns about the psychological impact of the pandemic have led to the implementation of interventions such as psychological support services.

As of April 11, 2020, India is grappling with the pandemic, with community transmission not yet widespread. HCPs across the country are facing unprecedented challenges, highlighting the need to assess and address their mental health needs early in the pandemic. Understanding the magnitude of stress, anxiety, and depression, along with associated risk factors, can aid in developing targeted interventions to support HCPs during this critical period. (Muhammad, Rahim, Ajmal, & Bibi, 2022; Wilson et al., 2020)

Rationale

Assessing the level of anxiety among critical care nurses working at tertiary care hospitals in Peshawar is crucial for identifying mental health needs, improving patient care, enhancing workplace well-being, optimizing resource allocation, and informing policy and practice in nursing.

Objective of the study

To assess the level of anxiety among critical care nurses working at tertiary care hospitals in Peshawar.

Research Question

What is the level of anxiety among critical care nurses working in tertiary care hospitals of Peshawar?

Significance of the study

Understanding the anxiety levels among critical care nurses in Peshawar's tertiary care hospitals is crucial for various reasons. Firstly, it impacts the well-being of the healthcare workforce. Secondly, high anxiety levels can compromise the quality of patient care. Thirdly, it affects workforce retention and satisfaction, leading to staffing shortages. Additionally, it informs resource allocation and support services, such as counseling and training programs. Lastly, research on this topic aids in policy development to support nurses' mental health and improve overall healthcare outcomes.

METHADODOLOGY

3.1 INTRODUCTION

It is a crucial section of a research paper, thesis, or any academic or scientific document. It outlines the approach and techniques that will be used to gather and analyze data, conduct experiments, or address

research questions. The methodology introduction provides a clear and concise overview of the steps you will take to achieve your research objectives. This section helps readers understand the reliability and validity of your research and allows them to assess the rigor of your methods.

3.2 Study Design

Descriptive Crosssectional study

3.3 Study Settings

It is the setting where study was conducted. The study was carried out in the critical care area of tertiary care hospital Peshawar (lady reading hospital, Khyber teaching Hospital and Hayatabad Medical Complex Peshawar.

3.4 Sample Size

In this study, the overall population comprises 128, the sample size of 97 was determined using Rao soft software. This sample size breaks down into 50 from LRH, 25 from KTH, and 22 from HMC Peshawar. The margin of error is set at 5%, and the confidence interval is 95%.

3.5 Sampling Technique

Convenient sampling technique was used for data collection.

3.6 Sample Selection

3.6.1 Inclusion criteria

The included participant of the study will be the Registered Nursing officer of Adult ICUs (medical, surgical, cardiac) only and having more than one year experience.

3.6.2 Exclusion Criteria

The exclusion criteria for this study was those RN Officers who are not willing to participate and paed ICU RN Officers and having less than one year experience.

3.7 Data Collection Tool

Adopted questionnaire (5 Likert scale) has been used for data collection, including two section. Section A consist of demographic data while section B comprised of 14 item to assess the level of anxiety

among critical care nurses working in tertiary care hospitals of Peshawar.

3.9 Data Analysis

We will utilize Statistical Package for Social Sciences (SPSS) version 22.0 to perform data analysis. In the realm of descriptive statistics, we will compute the average and standard deviation for continuous variables like age. For categorical variables, we will determine frequencies and percentages.

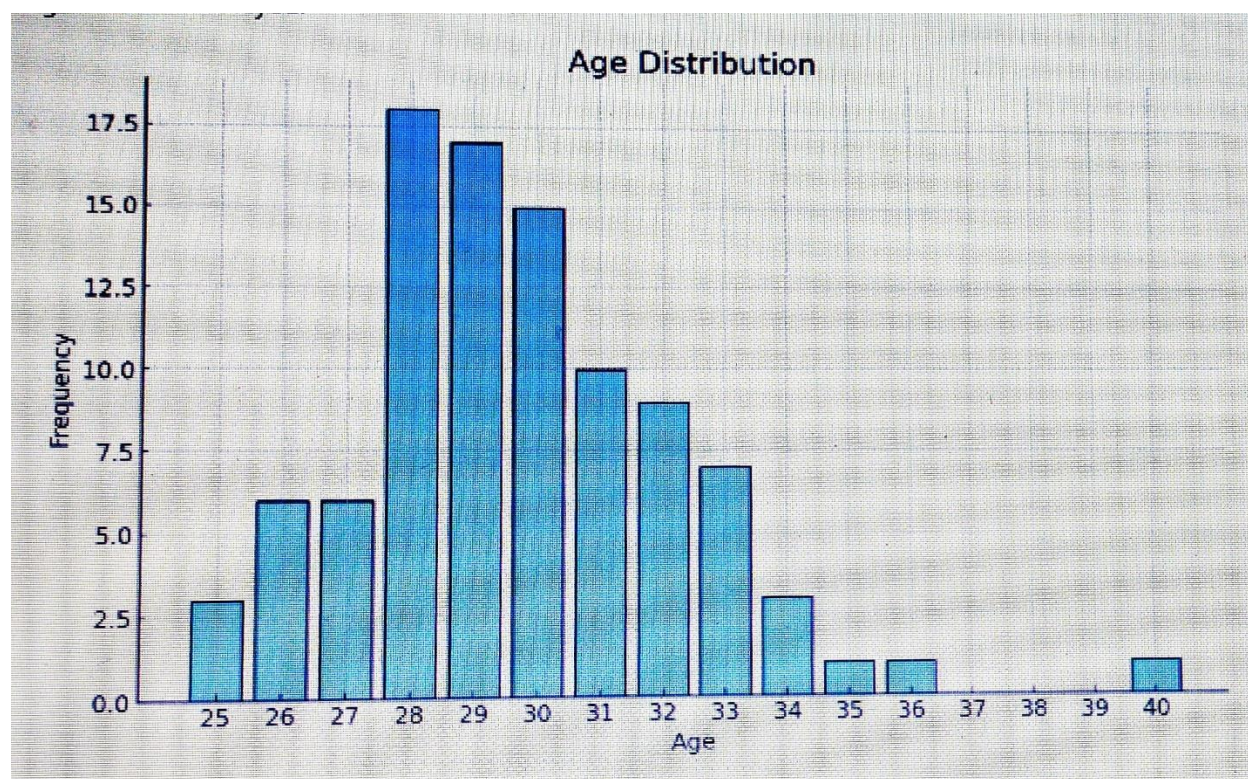
3.8 Ethical Consideration

- Approval from Graduate committee of the college
- Approval from administration of study setting
- Informed consent
- Data collection through validated tools

Results

Age of the respondent

The age distribution shows that the majority of individuals are between 28 and 32 years old, which makes up more than half of the sample (51.4%). The cumulative percentage indicates that 77.3% of individuals are 31 years old or younger. The distribution is skewed towards the younger ages, with very few individuals aged 35 and above (only 3 out of 97, or 3.1%). The bar chart visualizing the age distribution. It highlights the concentration of individuals around the ages of 28 to 30, with a noticeable peak at age 28. The distribution is skewed towards younger ages, with very few individuals older than 34. Fig: 3.1



Marital status of Respondent

The marital status data shows that out of the total sample of 97 individuals, 46 (47.4%) are married, while 51 (52.6%) are unmarried. This indicates a nearly even split between married and unmarried

individuals, with a slight majority being unmarried. The cumulative percentage confirms that 100% of the sample is accounted for, ensuring no missing data in this category. Fig 3.2

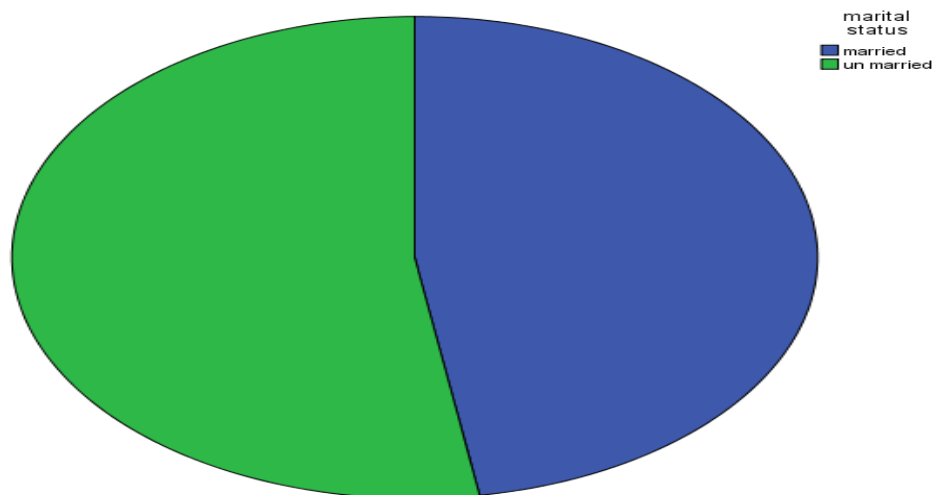


Figure 3.2

Gender of the participants

The gender distribution indicates a higher proportion of females (57.7%) compared to males (42.3%) in the sample. This distribution shows a moderate imbalance with females being the majority. The bar

chart visualizing the gender distribution. It highlights that there are more females (57.7%) than males (42.3%) in the sample, showing a moderate imbalance in favor of females. Fig 3.3

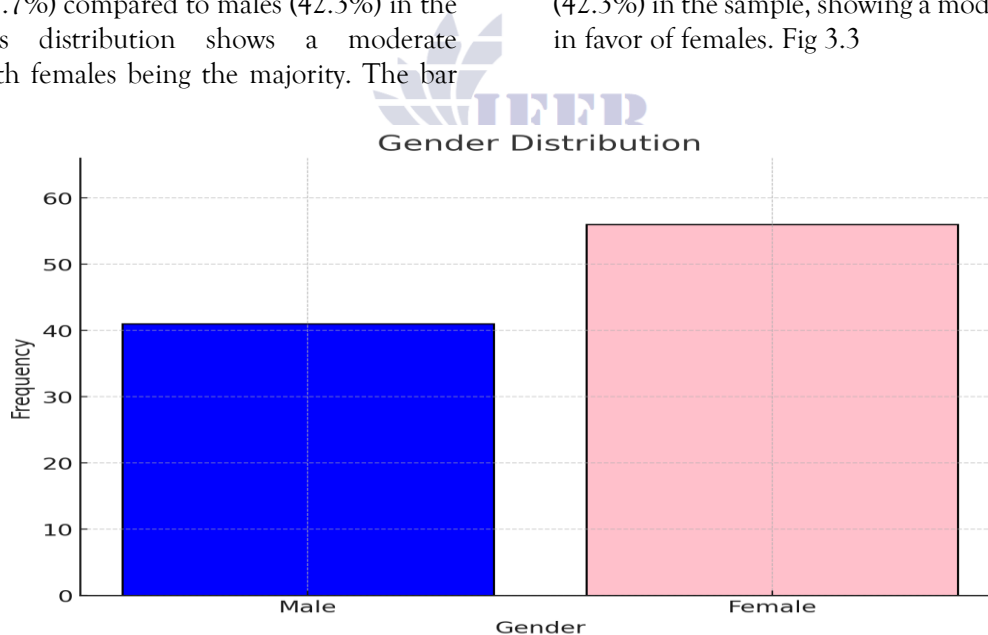
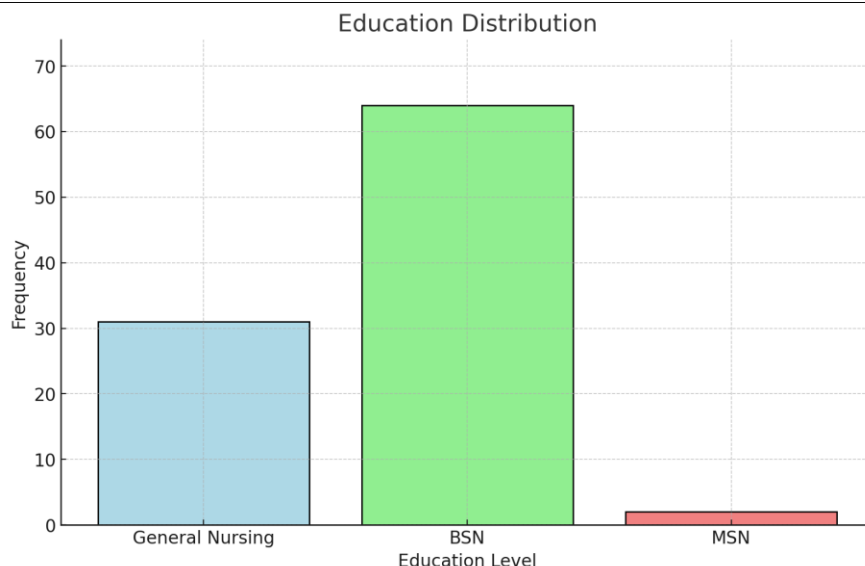


Fig 3.3

Education of the Respondent

The mean value is 1.7010, suggesting that the majority of individuals fall closer to the lower end of the scale. The standard deviation is 0.50342, indicating moderate variability in the education levels among the individuals. The education distribution shows that

the majority of individuals hold a BSN (66.0%), indicating a high level of educational attainment in nursing within the sample. A significant portion (32.0%) has a general nursing education. A small fraction (2.1%) has achieved an MSN, reflecting advanced education in the field. Fig 3.4



Assessment of Respondents to Anxiety level

The below mentioned table provides detailed descriptive statistics for various psychological and physical symptoms measured in a dataset of 97 observations. Each symptom is rated on a scale from 0.00 to 4.00. The data indicate moderate levels of various anxiety symptoms among nurses in critical care areas, with significant interrelationships between different anxiety-related symptoms. Demographic factors like marital status, gender, and education level show significant correlations with anxiety symptoms, suggesting that these factors can influence the anxiety experiences of nurses. Addressing these symptoms through targeted interventions could improve the well-being of nurses working in high-stress environments like critical care. here is a detail analysis of each item.

Anxious mood (Worries, anticipation of the worst, fearful anticipation, irritability)

The most common level of anxious mood is moderate, with 43 respondents (44.3%). Combined, mild and moderate levels account for a significant majority: 32 (33.0%) + 43 (44.3%) = 75 (77.3%). Severe and very severe levels combined account for 18 respondents (18.5%). Up to moderate severity: 81.4% of respondents fall within this range. Adding severe to very severe, almost all respondents (99.0%) fall within these categories, leaving only 1.0% in the very severe category. While a significant portion of the respondents experience some level of anxious mood, the majority of these are in the mild to moderate range. Severe anxiety is present in a notable minority, but very severe anxiety is rare. Fig 3.5

Anxious mood(Worries, anticipation of the worst, fearful anticipation, irritability)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid not present	4	4.1	4.1	4.1
mild	32	33.0	33.0	37.1
moderate	43	44.3	44.3	81.4
severe	17	17.5	17.5	99.0
very severe	1	1.0	1.0	100.0
Total	97	100.0	100.0	

Fig 3.5

Tension (Feelings of tension, fatigability, startle response, moved to tears easily, trembling, feelings of restlessness, inability to relax).

The most common level of tension is **moderate**, with 45 respondents (46.4%). Combined, mild and moderate levels account for a significant majority: 24 (24.7%) + 45 (46.4%) = 69 (71.1%). Severe and very severe levels combined account for 25 respondents

(25.7%). Up to moderate severity: 74.2% of respondents fall within this range. Adding severe to very severe, almost all respondents (99.0%) fall within these categories, leaving only 1.0% in the very severe category. While a significant portion of the respondents experience some level of tension, the majority of these are in the mild to moderate range. Severe tension is present in a notable minority, but very severe tension is rare. Fig 3.6

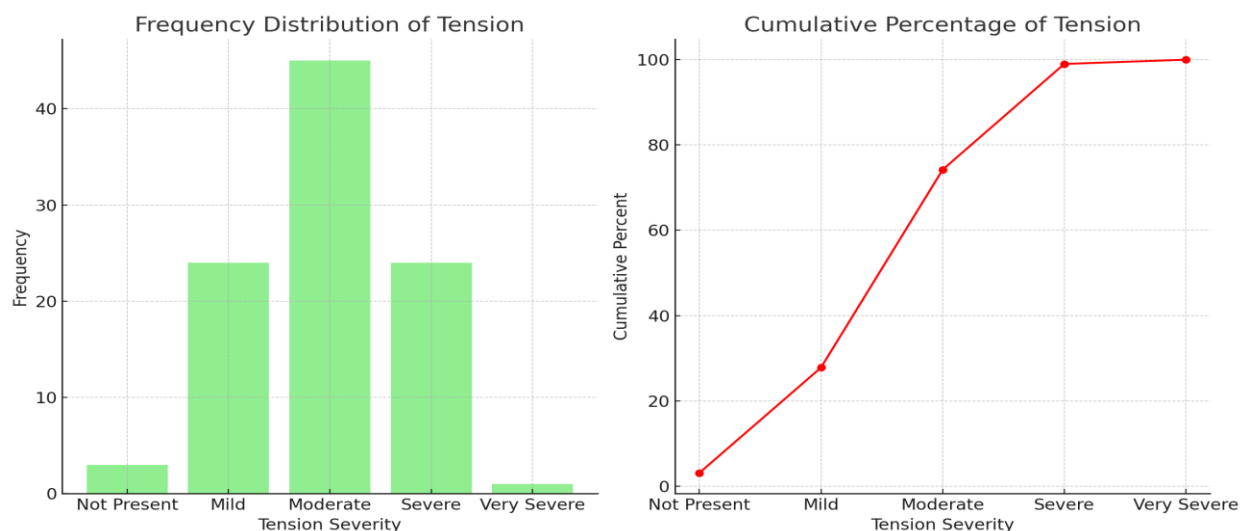


Fig 3.6
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Fears (Of dark, of strangers, of being left alone, of animals, of traffic, of crowds)

The most common level of fears is **moderate**, with 46 respondents (47.4%). Combined, mild and moderate levels account for a significant majority: 22 (22.7%) + 46 (47.4%) = 68 (70.1%). Severe and very severe levels combined account for 22 respondents (22.7%). Up to

moderate severity: 77.3% of respondents fall within this range. Adding severe to very severe, almost all respondents (96.9%) fall within these categories, leaving only 3.1% in the very severe category. While a significant portion of respondents experience some level of fears, the majority of these are in the mild to moderate range. Severe fears are present in a notable minority, but very severe fears are rare. Fig 3.7

Fears (Of dark, of strangers, of being left alone, of animals, of traffic, of crowds)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid not present	7	7.2	7.2	7.2
mild	22	22.7	22.7	29.9
moderate	46	47.4	47.4	77.3
severe	19	19.6	19.6	96.9
very severe	3	3.1	3.1	100.0
Total	97	100.0	100.0	

Fig 3.7

Insomnia (Difficulty in falling asleep, broken sleep, unsatisfying sleep and fatigue on waking, dreams, nightmares, night terrors)

The most common level of insomnia is moderate, with 43 respondents (44.3%). Combined, mild and moderate levels account for a significant majority (68.0%). Severe and very severe levels combined account for 28 respondents (28.9%). Up to moderate

severity: 71.1% of respondents fall within this range. Adding severe to very severe, the majority of respondents (90.7%) fall within these categories, leaving only 9.3% in the very severe category. A significant portion of respondents experience insomnia, with the majority being in the mild to moderate range. Severe and very severe insomnia are present in a notable minority. Fig 3.8

Insomnia (Difficulty in falling asleep, broken sleep, unsatisfying sleep and fatigue on waking, dreams, nightmares, night terrors)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid not present	3	3.1	3.1	3.1
mild	23	23.7	23.7	26.8
moderate	43	44.3	44.3	71.1
severe	19	19.6	19.6	90.7
very severe	9	9.3	9.3	100.0
Total	97	100.0	100.0	

Fig 3.8

Intellectual (Difficulty in concentration, poor memory)

The most common level of intellectual difficulty is moderate, with 43 respondents (44.3%). Combined, mild and moderate levels account for a significant majority (65.9%). Severe and very severe levels combined account for 31 respondents (31.9%). 68.0% of respondents fall within this range of

moderate severity. Adding severe to very severe, most respondents (88.7%) fall within these categories, leaving only 11.3% in the very severe category. While a significant portion of respondents experience some level of intellectual difficulty, the majority of these are in the mild to moderate range. Severe intellectual difficulty is present in a notable minority, and very severe difficulty is also notable. Fig 3.9

Intellectual (Difficulty in concentration, poor memory)

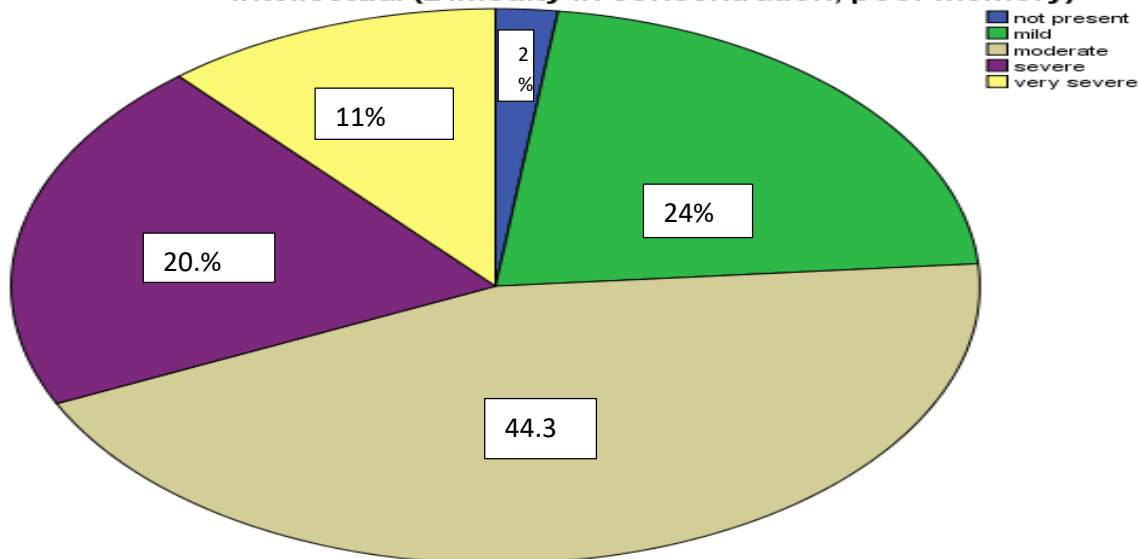


Fig 3.9

Depressed mood (Loss of interest, lack of pleasure in hobbies, depression, early waking, diurnal swing)
 The most common severity level is "moderate," with 50.5% of the respondents experiencing moderate depressed mood. A significant majority (96.9%) of the respondents report experiencing some level of depressed mood (mild to very severe). Only 2 respondents (2.1%) report not experiencing a depressed mood at all. By the time we include those

experiencing "mild" depressed mood, the cumulative percentage reaches 23.7%. The cumulative percentage for those experiencing up to "moderate" depressed mood is 74.2%, indicating that nearly three-quarters of the respondents experience at least a moderate level of depressed mood. Severe and very severe cases together make up 25.8% of the respondents, highlighting a significant portion experiencing high levels of depressed mood. Fig 3.10

Depressed mood (Loss of interest, lack of pleasure in hobbies, depression, early waking, diurnal swing)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid not present	2	2.1	2.1	2.1
mild	21	21.6	21.6	23.7
moderate	49	50.5	50.5	74.2
severe	19	19.6	19.6	93.8
very severe	6	6.2	6.2	100.0
Total	97	100.0	100.0	

Fig 3.10

Somatic (muscular) (pains and aches, twitching, stiffness, myoclonic jerks, grinding of teeth, unsteady voice, increased muscular tone).
 The most common severity level is "moderate," with 42.3% of the respondents experiencing moderate somatic (muscular) symptoms. A significant majority (92.8%) of the respondents report experiencing some level of somatic (muscular) symptoms (mild to very severe). Only 7 respondents (7.2%) report not experiencing somatic (muscular) symptoms at all. By

the time we include those experiencing "mild" symptoms, the cumulative percentage reaches 27.8%. The cumulative percentage for those experiencing up to "moderate" symptoms is 70.1%, indicating that over two-thirds of the respondents experience at least a moderate level of somatic (muscular) symptoms. Severe and very severe cases together make up 29.9% of the respondents, highlighting a substantial portion experiencing high levels of somatic (muscular) symptoms. Fig 3.11

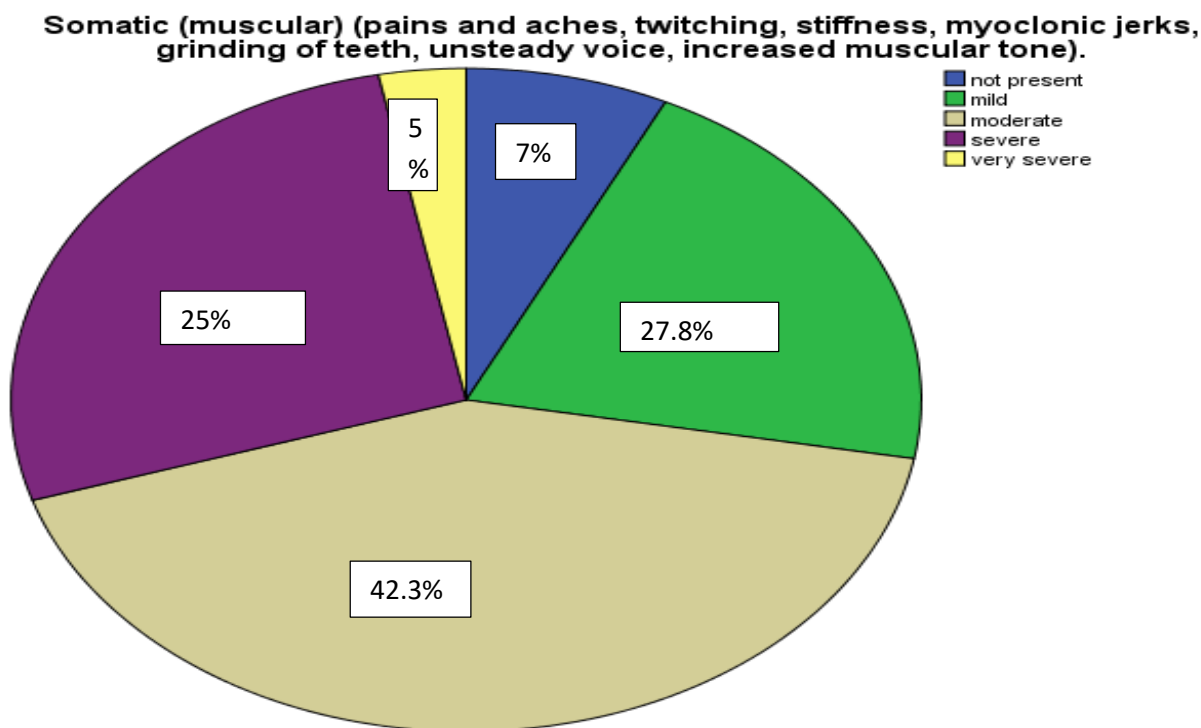


Fig 3.11

Somatic (sensory) (Tinnitus, blurring of vision, hot and cold flushes, feelings of weakness, pricking sensation).

The most common severity level is "moderate," with 41.2% of the respondents experiencing moderate somatic (sensory) symptoms. A significant majority (93.8%) of the respondents report experiencing some level of somatic (sensory) symptoms (mild to very severe). Only 6 respondents (6.2%) report not experiencing somatic (sensory) symptoms at all. By the

time we include those experiencing "mild" symptoms, the cumulative percentage reaches 22.7%. The cumulative percentage for those experiencing up to "moderate" symptoms is 63.9%, indicating that nearly two-thirds of the respondents experience at least a moderate level of somatic (sensory) symptoms. Severe and very severe cases together make up 36.1% of the respondents, highlighting a substantial portion experiencing high levels of somatic (sensory) symptoms. Fig 3.12

Somatic (sensory) (Tinnitus, blurring of vision, hot and cold flushes, feelings of weakness, pricking sensation).

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid not present	6	6.2	6.2	6.2
mild	16	16.5	16.5	22.7
moderate	40	41.2	41.2	63.9
severe	29	29.9	29.9	93.8
very severe	6	6.2	6.2	100.0
Total	97	100.0	100.0	

Fig 3.12

Cardiovascular symptoms (Tachycardia, palpitations, pain in chest, throbbing of vessels, fainting feelings, missing beat).

The most common severity level is "moderate," with 39.2% of the respondents experiencing moderate cardiovascular symptoms. A significant majority (92.8%) of the respondents report experiencing some level of cardiovascular symptoms (mild to very severe). Only 7 respondents (7.2%) report not experiencing cardiovascular symptoms at all. By the

time we include those experiencing "mild" symptoms, the cumulative percentage reaches 29.9%. The cumulative percentage for those experiencing up to "moderate" symptoms is 69.1%, indicating that nearly 70% of the respondents experience at least a moderate level of cardiovascular symptoms. Severe and very severe cases together account for 31.0% of the respondents, indicating a notable portion experiencing high levels of cardiovascular symptoms. Fig 3.13

Cardiovascular symptoms (Tachycardia, palpitations, pain in chest, throbbing of vessels, fainting feelings, missing beat)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid not present	7	7.2	7.2	7.2
mild	22	22.7	22.7	29.9
moderate	38	39.2	39.2	69.1
severe	25	25.8	25.8	94.8
very severe	5	5.2	5.2	100.0
Total	97	100.0	100.0	

Fig 3.13

Respiratory symptoms (Pressure or constriction in chest, choking feelings, sighing, dyspnea)

The most common severity level is "moderate," with 45.4% of the respondents experiencing moderate respiratory symptoms. A significant majority (97.9%) of the respondents report experiencing some level of respiratory symptoms (mild to very severe). Only 2 respondents (2.1%) report not experiencing respiratory symptoms at all. By the time we include

those experiencing "mild" symptoms, the cumulative percentage reaches 21.6%. The cumulative percentage for those experiencing up to "moderate" symptoms is 67.0%, indicating that nearly two-thirds of the respondents experience at least a moderate level of respiratory symptoms. Severe and very severe cases together account for 33.0% of the respondents, indicating a substantial portion experiencing high levels of respiratory symptoms. Fig 3.14

Respiratory symptoms (Pressure or constriction in chest, choking feelings, sighing, dyspnea)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid not present	2	2.1	2.1	2.1
mild	19	19.6	19.6	21.6
moderate	44	45.4	45.4	67.0
severe	26	26.8	26.8	93.8
very severe	6	6.2	6.2	100.0
Total	97	100.0	100.0	

Fig 3.14

Gastrointestinal symptoms (Difficulty in swallowing, wind abdominal pain, burning sensations, abdominal fullness, nausea, vomiting, borborygmi, looseness of bowels, loss of weight, constipation)

The most common severity level is "moderate," with 49.5% of the respondents experiencing moderate gastrointestinal symptoms. A significant majority (99.0%) of the respondents report experiencing some level of gastrointestinal symptoms (mild to very severe). Only 1 respondent (1.0%) reports not

experiencing gastrointestinal symptoms at all. By the time we include those experiencing "mild" symptoms, the cumulative percentage reaches 21.6%. The cumulative percentage for those experiencing up to "moderate" symptoms is 71.1%, indicating that over two-thirds of the respondents experience at least a moderate level of gastrointestinal symptoms. Severe and very severe cases together account for 28.8% of the respondents, indicating a notable portion experiencing high levels of gastrointestinal symptoms. Fig3.15

Gastrointestinal symptoms (Difficulty in swallowing, wind abdominal pain, burning sensations, abdominal fullness, nausea, vomiting, borborygmi, looseness of bowels, loss of weight, constipation)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid not present	1	1.0	1.0	1.0
mild	20	20.6	20.6	21.6
moderate	48	49.5	49.5	71.1
severe	21	21.6	21.6	92.8
very severe	7	7.2	7.2	100.0
Total	97	100.0	100.0	

Fig 3.15

Genitourinary symptoms (Frequency of micturition, urgency of micturition, amenorrhea, menorrhagia, development of frigidity, premature ejaculation, loss of libido, impotence)

The most common severity level is "moderate," with 55.7% of the respondents experiencing moderate genitourinary symptoms. A significant majority (95.9%) of the respondents report experiencing some level of genitourinary symptoms (mild to very severe). Only 4 respondents (4.1%) report not experiencing genitourinary symptoms at all. By the

time we include those experiencing "mild" symptoms, the cumulative percentage reaches 23.7%. The cumulative percentage for those experiencing up to "moderate" symptoms is 79.4%, indicating that nearly 80% of the respondents experience at least a moderate level of genitourinary symptoms. Severe and very severe cases together account for 20.6% of the respondents, indicating a notable portion experiencing high levels of genitourinary symptoms. Fig 3.16

Genitourinary symptoms (Frequency of micturition, urgency of micturition, amenorrhea, menorrhagia, development of frigidity, premature ejaculation, loss of libido, impotence)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid not present	4	4.1	4.1	4.1
mild	19	19.6	19.6	23.7
moderate	54	55.7	55.7	79.4
severe	16	16.5	16.5	95.9
very severe	4	4.1	4.1	100.0
Total	97	100.0	100.0	

Fig 3.16

Autonomic symptoms (Dry mouth, flushing, pallor, tendency to sweat, giddiness, tension headache, raising of hair).

The most common severity level is "moderate," with 52.6% of the respondents experiencing moderate autonomic symptoms. A significant majority (97.9%) of the respondents report experiencing some level of autonomic symptoms (mild to very severe). Only 2 respondents (2.1%) report not experiencing autonomic symptoms at all. By the time we include

those experiencing "mild" symptoms, the cumulative percentage reaches 19.6%. The cumulative percentage for those experiencing up to "moderate" symptoms is 72.2%, indicating that over two-thirds of the respondents experience at least a moderate level of autonomic symptoms. Severe and very severe cases together account for 26.8% of the respondents, indicating a notable portion experiencing high levels of autonomic symptoms. Fig 3.16

Autonomic symptoms (Dry mouth, flushing, pallor, tendency to sweat, giddiness, tension headache, raising of hair).

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid not present	2	2.1	2.1	2.1
mild	17	17.5	17.5	19.6
moderate	51	52.6	52.6	72.2
severe	24	24.7	24.7	96.9
very severe	2	2.1	2.1	99.0
11.00	1	1.0	1.0	100.0
Total	97	100.0	100.0	

Fig 3.16

Behavior at interview (Fidgeting, restlessness or pacing, tremor of hands, furrowed brow, strained face, sighing or rapid respiration, facial pallor, swallowing, etc).

The most common severity level is "moderate," with 59.8% of the respondents displaying moderate behavior at the interview. A significant majority

(99.0%) of the respondents exhibit some level of behavior at the interview (mild to very severe). Only 1 respondent (1.0%) reports not exhibiting any behavior at the interview. By the time we include those exhibiting "mild" behavior, the cumulative percentage reaches 13.4%. The cumulative percentage for those exhibiting up to "moderate" behavior is

73.2%, indicating that nearly three-quarters of the respondents exhibit at least a moderate level of behavior at the interview. Severe and very severe cases

together account for 26.8% of the respondents, indicating a notable portion exhibiting high levels of behavior at the interview. Fig 3.17

Behavior at interview (Fidgeting, restlessness or pacing, tremor of hands, furrowed brow, strained face, sighing or rapid respiration, facial pallor, swallowing, etc).

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid not present	1	1.0	1.0	1.0
mild	12	12.4	12.4	13.4
moderate	58	59.8	59.8	73.2
severe	22	22.7	22.7	95.9
very severe	4	4.1	4.1	100.0
Total	97	100.0	100.0	

Fig 3.17

The overall analysis reveals that nurses in critical care areas exhibit moderate levels of anxiety and related symptoms across various domains. The most common severity level for symptoms like anxious mood, tension, fears, insomnia, intellectual difficulties. Somatic (sensory), cardiovascular, respiratory, gastrointestinal, genitourinary, autonomic, and behavioral symptoms is moderate, with significant portions of respondents experiencing these symptoms in the mild to moderate range. Severe to very severe symptoms are less common but still notable, particularly in areas like depressed mood and somatic symptoms. Most respondents experience these symptoms in the mild to moderate range, with a substantial portion reporting high levels of severity, especially in gastrointestinal and genitourinary symptoms. Severe and very severe cases are less frequent but still significant, particularly in autonomic and behavioral domains. Overall, nearly all respondents experience some level of symptoms, highlighting a broad impact on their well-being. Demographic factors correlate significantly with these symptoms, suggesting that targeted interventions addressing these factors could improve overall nurse well-being in high-stress environments.

Discussion

Our study’s findings highlight a moderate level of anxiety among nurses working in critical care areas, evidenced by the mean scores across various anxiety-related symptoms. The symptoms with the highest mean scores include intellectual difficulties (2.18),

respiratory symptoms (2.15), and gastrointestinal symptoms (2.13), indicating significant challenges in these areas. Interestingly, the skewness values for most symptoms are close to zero, suggesting a relatively symmetrical distribution of scores, except for autonomic symptoms which exhibit a high positive skewness (4.25), indicating that while most nurses report moderate levels, a few experience extremely high levels. This study underscores the pervasive impact of anxiety on critical care nurses, with significant correlations between symptoms, such as between anxious mood and tension, fears, and insomnia. These findings suggest the need for targeted interventions to address anxiety and its multifaceted effects to improve the well-being and performance of nurses in high-stress environments.

Similar study was conducted in Saudi Arabia a large sample of healthcare workers (HCWs) in Saudi Arabia during the COVID-19 pandemic to assess their anxiety levels. The data revealed that 32.3% of HCWs experienced high anxiety, while 68.5% had medium or high anxiety levels. Several factors associated with high anxiety levels were identified and categorized into three themes: individual, social, and organizational. Individual factors included smoking, living with a chronic disease, being a nurse, having a high self-perceived risk of contracting COVID-19, and a history of anxiety. Social factors included living with an elderly person, someone with a chronic disease, immune deficiency, or respiratory disease, and knowing a coworker, friend, or family member who tested positive for COVID-19. Organizational factors

related to increased anxiety included lack of regular communication and updates from the organization, insufficient and unsatisfactory information about COVID-19, lack of access to COVID-19 testing for staff, and absence of a crisis management plan. These findings align with other studies examining the mental health impact of COVID-19 on HCWs. Policymakers can benefit from this and other studies examining the impact of COVID-19 on frontline workers by using the data to inform national healthcare decisions. This study identifies potential predictors of anxiety among HCWs, suggesting that incorporating these factors into crisis (Alenazi et al., 2020).

In same context another study was conducted in Australia to assess the level of anxiety among nurses which study revealed that depressive symptoms were common, with a prevalence rate exceeding 30%, in stark contrast to only 4% in the general Australian population. The results indicated that over a quarter of the sample met the DASS criteria for depression (scores of 10 and above), with several individuals exhibiting severe depressive symptoms. The depression prevalence among nurses in our study was consistent with global literature, which reports rates ranging from approximately 18% to 53%. Similarly, anxiety symptoms were prevalent, affecting over 40% of the sample compared to 14% of the general Australian population. More than a quarter of the sample met the DASS criteria for anxiety (scores of 8 and above), with over 10% presenting severe anxiety. This prevalence aligns with global literature, which reports anxiety rates among nurses ranging from 20% to 60%. Stress levels were also high, with over 40% of the nursing sample meeting the DASS criteria for stress (scores of 15 and above), and several individuals showing severe stress levels. This prevalence rate was similar to those reported in other countries. Overall, the rates of depression, anxiety, and stress in this cohort were significantly higher than population norms. Ignoring the signs of distress and depression in nursing professionals can lead to increased physical and emotional stress for the individual, potentially resulting in lower-quality patient care and higher workloads for healthcare establishments (Maharaj et al., 2019).

In contrast another study was conducted in china that Nurses dealing with the COVID-19 outbreak are at a

heightened risk for anxiety and depression, influenced by several common predictors. These can be categorized into three major groups: demographic, psychosocial, and work-related factors. Demographically, nurses who were female, married, and had family responsibilities were more prone to anxiety and depression. Younger nurses showed higher anxiety levels than older ones, likely due to less clinical experience, while nurses with less education exhibited higher depression levels, possibly due to a lack of confidence in managing the virus. Psychosocially, those who worried about contracting the disease and restricted social interactions faced higher anxiety and depression. Work-related factors included increased anxiety in nurses less likely to take leave and those working in hospitals admitting suspected cases. Studies support these findings, indicating that women, frontline workers, and those with significant family burdens experience greater mental health challenges. Timely mental health support is crucial for maintaining the well-being of healthcare workers during such outbreaks (Han et al., 2020).

Healthcare is a demanding field with high responsibility and exposure to both emotional and physical risks, often resulting in depression, anxiety, burnout, and, in severe cases, post-traumatic stress disorder. This study aimed to identify the personal, professional, and organizational factors contributing to increased stress among critical care nurses to develop effective mitigation strategies. Conducted through a cross-sectional design and in-person surveys from January 1, 2011, to December 1, 2015, this research surveyed 21,767 ICU nurses in Iran using multistage cluster random sampling. The results indicated that higher stress levels were linked to male gender, lower peer collaboration, working with a supervisor, unfavorable nurse-patient ratios, and working in surgical ICUs, while increased age and married status were associated with lower stress levels. Other factors, such as ICU type, number of ICU beds, shift times, holiday work, education level, body mass index, and number of children, were not significantly related to stress levels. These findings, the largest of their kind, support similar studies from Europe and the Americas, suggesting that enhancing peer collaboration, resource availability, and staffing ratios

are crucial for reducing workplace stress among ICU nurses (Vahedian-Azimi et al., 2019).

Limitations of the study

The cross-sectional design of the study limits the ability to infer causality between anxiety levels and the identified factors. Reliance on self-reported data may introduce bias, as participants might underreport or over report their symptoms. Findings may not be generalizable across different cultural and regional contexts, given the variations in healthcare systems and work environments. While the study includes a substantial number of participants, the sample size may still limit the ability to detect subtle differences or rare outcomes. The study focuses primarily on anxiety, and further research is needed to explore other aspects of mental health, such as burnout and post-traumatic stress disorder.

Conclusion

Our study highlights a moderate level of anxiety among nurses working in critical care areas, with specific symptoms like intellectual difficulties, respiratory symptoms, and gastrointestinal symptoms being most prevalent. The distribution of anxiety-related symptoms is generally symmetrical, except for autonomic symptoms, which exhibit a high positive skewness, indicating that a minority of nurses experience extremely high levels of anxiety. These findings underscore the significant impact of anxiety on critical care nurses, with notable correlations between symptoms such as anxious mood, tension, fears, and insomnia, moreover critical care nurses experienced increased stress linked to professional and organizational factors.

Recommendations

Develop and implement targeted interventions to address specific anxiety-related symptoms among critical care nurses, focusing on intellectual, respiratory, and gastrointestinal symptoms.

Provide comprehensive mental health support, including counseling and stress management programs, to help nurses cope with anxiety, depression, and stress. Improve organizational communication and crisis management plans to reduce anxiety levels among HCWs, ensuring regular updates and clear information dissemination.

Enhance the work environment by improving peer collaboration, resource availability, and staffing ratios to reduce workplace stress.

References

- Alenazi, T. H., BinDhim, N. F., Alenazi, M. H., Tamim, H., Almagrabi, R. S., Aljohani, S. M., . . . Alqahtani, S. A. (2020). Prevalence and predictors of anxiety among healthcare workers in Saudi Arabia during the COVID-19 pandemic. *Journal of infection and public health*, 13(11), 1645-1651.
- Belayneh, Z., Zegeye, A., Tadesse, E., Asrat, B., Ayano, G., & Mekuriaw, B. (2021). Level of anxiety symptoms and its associated factors among nurses working in emergency and intensive care unit at public hospitals in Addis Ababa, Ethiopia. *BMC nursing*, 20, 1-7.
- Fatima, A., Ali, S., Ghani, N., & Shah, B. A. (2020). LEVEL of stress, anxiety and depression among nurses working at hayatabad medical complex Peshawar Pakistan. *Khyber Medical University Journal*, 12(4), 321-325.
- Han, L., Wong, F. K. Y., She, D. L. M., Li, S. Y., Yang, Y. F., Jiang, M. Y., . . . Chung, L. Y. F. (2020). Anxiety and depression of nurses in a north west province in China during the period of novel coronavirus pneumonia outbreak. *Journal of nursing scholarship*, 52(5), 564-573.
- Hassan, S., & Husain, W. (2020). The different levels of depression and anxiety among Pakistani professionals. *Insights Depress Anxiety*, 4, 012-018.
- Jan, A., Naz, S., Ahmad, A., & Zamin, S. (2021). Stress, anxiety and depression levels among nurses working at Hayatabad Medical Complex, Peshawar, Pakistan. *Journal of Rehman Medical Institute*, 7(2), 12-15.
- Labrague, L. J., McEnroe-Petitte, D. M., Bowling, A. M., Nwafor, C. E., & Tsaras, K. (2019). *High-fidelity simulation and nursing students' anxiety and self-confidence: A systematic review*. Paper presented at the Nursing forum.

- Maharaj, S., Lees, T., & Lal, S. (2019). Prevalence and risk factors of depression, anxiety, and stress in a cohort of Australian nurses. *International journal of environmental research and public health*, 16(1), 61.
- Muhammad, D., Rahim, T., Ajmal, H., & Bibi, N. (2022). Psychosocial Risk Factors and Quality of Life Among Nurses Working in Public Sector Tertiary Care Hospitals of Peshawar, A Correlational Study: Psychosocial Risk Factors and Quality of Life among Nurses. *Pakistan Journal of Health Sciences*, 41-45.
- Nia, H. S., Lehto, R. H., Ebadi, A., & Peyrovi, H. (2016). Death anxiety among nurses and health care professionals: A review article. *International journal of community based nursing and midwifery*, 4(1), 2.
- Qayyum, W., Khalil, A., Jawad, M., & Ashraf, S. (2020). Psychological status of healthcare workers during COVID-19 pandemic: a single center observational study from Peshawar. *Journal of Rehman Medical Institute*, 6(4), 03-06.
- Ramdan, I. M. (2019). Reliability and validity test of the Indonesian version of the hamilton anxiety rating scale (ham-a) to measure work-related stress in nursing.
- Rathnayake, S., & Ekanayaka, J. (2016). Depression, anxiety, and stress among undergraduate nursing students in a public university in Sri Lanka. *International Journal of Caring Sciences*, 9(3), 1020-1032.
- Rycroft, C. (2018). *Anxiety and neurosis*: Routledge.
- Vahedian-Azimi, A., Hajiesmaeili, M., Kangasniemi, M., Fornés-Vives, J., Hunsucker, R. L., Rahimibashar, F., . . . Miller, A. C. (2019). Effects of stress on critical care nurses: a national cross-sectional study. *Journal of intensive care medicine*, 34(4), 311-322.
- Wilson, W., Raj, J. P., Rao, S., Ghiya, M., Nedungalaparambil, N. M., Mundra, H., & Mathew, R. (2020). Prevalence and predictors of stress, anxiety, and depression among healthcare workers managing COVID-19 pandemic in India: a nationwide observational study. *Indian Journal of Psychological Medicine*, 42(4), 353-358.
- Zahid, M., Tahir, N., Quadri, K. M., Azhar, A., Shabir, M. M., Wahab, A., . . . Nadeem, D. (2022). Mental health status of medical staff working in hospitals during COVID-19 pandemic in Pakistan: A cross-sectional study. *Principles and Practice of Clinical Research*, 8(1).

