BURNOUT AND COPING MECHANISMS AMONG CRITICAL CARE NURSES OF NAMS- BIR HOSPITAL, KATHMANDU

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Abstract

This paper aims to assess burnout among nurses in the Critical Care Unit of the National Academy of Medical Sciences -Bir Hospital, explore their coping strategies, and examine the correlation between burnout and coping mechanisms. A cross-sectional descriptive study was conducted among 154 critical care nurses using the Burnout Assessment Tool to evaluate burnout across four dimensions: Emotional Exhaustion, Mental Distance, Cognitive Impairment, and Emotional Impairment. Coping strategies were assessed using a closed-ended questionnaire covering fourteen dimensions. The overall burnout level was high, with a score of 2.55. Factors associated with higher burnout levels included urban residency, ethnicity, higher designation, level of education, marital status, number of dependents, and longer work experience in the CCU. Significant relationships were found between burnout and the use of coping mechanisms such as humor, self-distraction, denial, substance use, self-blame, and behavioral disengagement. In contrast, there was little to no relationship between burnout and the use of acceptance, planning, active coping, emotional support, positive reframing, venting, spiritual support, and instrumental support. The study underscores the importance of addressing workplace stressors at the organizational level and recommends further in-depth research on the topic across multiple settings.

Key Words: Burnout, coping, mechanism, critical care nurse, NAMS - Bir Hospital

Introduction

Occupational burnout is an emerging problem associated with nursing, one of the world's most highly stressful occupations (Najimi, 2012; Umutoni, Nankundwa, Sego, & Bhengu, 2017). Poorly managed work-related stress causes occupational burnout, which manifests as emotional exhaustion, mental distance, cognitive impairment, and physical exhaustion. World Health Organization [WHO], 2019a; Schaufeli, Leiter, & Maslach, 2009). The Royal Dutch Medical Association classifies burnout as a subtype of adjustment disorder within the ICD-10 system, appearing as an additional diagnosis (Z 73.0) (World Health Organization, 1992). Since it is not classified as a medical condition, professionals assess and diagnose it through coping strategies and addressing workplace stressors.

Nurses working in critical care units encounter unique challenges that can lead to burnout. Marshall et al. (2017) explain that an Intensive Care Unit (ICU) or Critical Care Unit (CCU) is a specialized setup designed to provide intensive medical and nursing care to critically ill patients, requiring highly skilled personnel, well-equipped facilities, and multi-modal physiological support to sustain life during severe organ system insufficiency (Marshall et al., 2017; Smith, 2013). This study aims to explore burnout among critical care nurses and identify the coping mechanisms to mitigate its impact on critical care Nurses of NAMS-Bir Hospital, Kathmandu, Nepal.

Burnout was initially described in 1974 by Herbert Freudenberger and Sigmund Ginsburg (Heinemann, 2017). Freudenberger, a German-born U.S. psychologist and psychotherapist, popularized the term through numerous publications, establishing himself as the founding father of the concept (Freudenberger, 1974;1975, 1977; Ginsburg, 1974; Freudenberger & Richelson, 1981; Heinemann, 2017). He proposed interventions at both organizational and individual levels, including shortening working hours, regular job rotation, frequent supervision, and staff training.

Occupational burnout has become a significant issue across various professions and industries, exacerbated by the COVID-19 pandemic, leading to heightened stress and burnout globally. The World Health Organization (WHO) recognizes burnout as an occupational phenomenon caused by chronic workplace stress (World Health Organization, 2019b).

Nepali healthcare workers have faced significant challenges, especially during the COVID-19 pandemic and natural disasters. Factors such as high workloads, long hours, limited resources, and concerns about personal safety have contributed to burnout among healthcare professionals even after the pandemic and crises. Sharma et al. (2021) conducted a cross-sectional survey among Nepali healthcare professionals during the pandemic, studying the levels of depression, anxiety, and stress. Siddiqui et al. (2023) conducted a descriptive cross-sectional study among Nepali undergraduate medical students. Baral and Subedi (2015) investigated job stress levels among nurses in selected private hospitals in Nepal. Mehta and Singh (2015) conducted a descriptive exploratory study among 50 nurses in critical care areas at BPKIHS Dharan, measuring stress among nurses in a tertiary care teaching hospital. Shrestha et al. (2021) performed an analytical study on burnout among healthcare professionals in Nepal.

Design and methods

This research incorporated a quantitative, cross-sectional descriptive study based on existing literature on the subject area, identifying burnout scores and analyzing the findings. The study applies the deductive method of reasoning. Using written and verbal consent, 154 critical care nurses working for at least 3 months were studied through a complete census method. The survey site is the National Institute of Medical Sciences (NAMS-Bir Hospital), Kathmandu. The study employs the general version, BAT-23, which includes 23 items spanning four core dimensions: exhaustion, mental distance, cognitive impairment, and emotional impairment. Responses are measured using a 5-point Likert scale ranging from 1 (never) to 5 (always), with higher scores indicating a greater risk of burnout.

The scores of burnouts were analyzed and interpreted as per the recommendations of the BAT Manual (Schaufeli et al., 2020) and statistical norms for Flemish employees (Manual - BAT, version 2.0, Tables 60/62, p 109/110). For the overall burnout score, the low level belongs to the score range of (1.00–1.60), Average (1.61 – 2.40), High (2.41– 3.29), and Very high (3.30 – 5.00). The Correlation and descriptive analysis were conducted to explore various coping mechanisms.

Health is a fundamental right of all individuals (Gautam, 2023). The primary goal of every healthcare system is to provide necessary medical treatment to the population. This study employed the Burnout Assessment Tool (BAT) to evaluate burnout levels among nurses working in critical care units (CCU/ICU). A structured, closed-ended questionnaire was also administered to gather data on coping mechanisms. Data collection was conducted through face-to-face, paper-and-pen surveys.

The BAT, developed by Wilmar Schaufeli and Hans De Witte at KU Leuven, Belgium, is a validated instrument designed to provide a comprehensive and contextual assessment of burnout, offering an alternative to the traditional three-dimensional Maslach Burnout Inventory (MBI). Its reliability and validity have been supported by previous research, including studies by Kuruva (2017), Martínez et al. (2020), McMeekin et al. (2017), Najimi et al. (2012), Sandin and Chorot (2003), and Sutharshan et al. (2021).

Conceptual framework

This study first assesses burnout levels using the Burnout Assessment Tool (BAT) and explores coping mechanisms across 14 dimensions. Figure 1 illustrates the relationships between variables, burnout levels, and coping strategies. Workload determinants such as restless and continuous tasks and overtime burden are identified as causal variables of burnout. Patient care-related factors include the availability of equipment or resources, patient demand, and emotional distress. In the work environment, collaboration within the team, supervisor, and colleague behavior, and conflicts are relevant causal variables. Organizational factors influencing burnout include management policies, strategies, and staff support services. Coping strategies employed by nurses are analyzed about burnout levels, justified across 14 distinct domains (Poghosyan et al., 2009; Bakker &Demerouti, 2003; McVicar, 2003; Khawa, 2021).

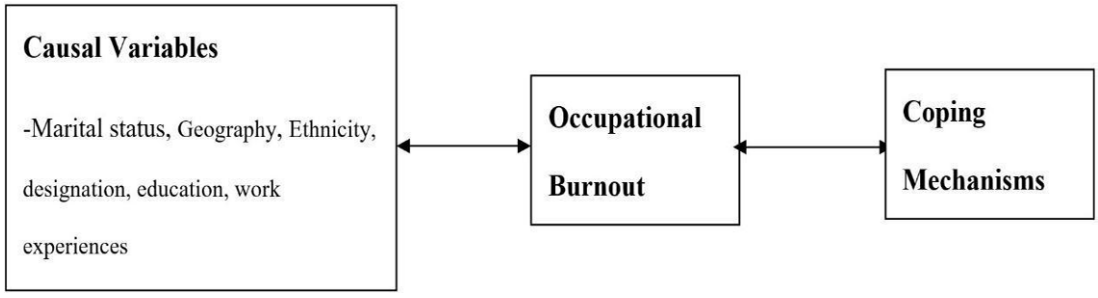

Figure 1: *Conceptual framework of the study*

Results

Among the 154 respondents, 50% were Brahmin or Chhetri, 39.6% were Adhiwasi or Janajati, 4.5% were Dalit, and 5.8% were Madheshi. The majority (70.8%) were from urban areas, 24% from rural areas, and 5.2% from semi-urban areas. Regarding professional roles, 11% of the critical care nurses were nursing supervisors (government level 7), 5.2% were sub-incharge (government level 6 or 7), and 83.8% were staff nurses (government level 5).

Educationally, 57.8% held a bachelor's degree or equivalent, 22.7% a master's degree or equivalent, and 19.5% a PCL or upper high school equivalent. Among the respondents, 59.1% were married and 40.9% were unmarried. Regarding dependents, 47.4% had no dependents, 14.9% had one, 18.2% had two, 13% had three, 5.2% had four, and two respondents reported having five and eight dependents, respectively.

Table 1: Socio-demographic information of respondents

		Count	Column N %
Ecological Region	Rural	37	24.0%
	Urban	109	70.8%
	Semi-Urban	8	5.2%
Ethnicity	Brahmin/Chhetri	77	50.0%
	Adhiwasi/Janajati	61	39.6%
	Dalit	7	4.5%
	Madhesi	9	5.8%
Religion	Hindu	142	92.2%
	Buddhist	5	3.2%
	Christian	2	1.3%
	Kirat	5	3.2%
	Muslim	0	0.0%
Position	Supervisor	17	11.0%
	Co-supervisor	8	5.2%
	Staff Nurse	129	83.8%
Highest Degree Earned	PCL	30	19.5%
	BA	89	57.8%
	Masters	35	22.7%
Marital Status	Married	91	59.1%
	Unmarried	63	40.9%
Nature of Employment	Permanent	116	75.3%
	Temporary	38	24.7%

Source: Field study, December 2023

Burnout level of respondents

The burnout level of 154 respondents was assessed, as shown in Table 2. The average overall burnout score was 2.55, with a median of 2.45 and a standard deviation of 0.61.

Burnout was categorized into four dimensions: emotional exhaustion, mental distance, cognitive impairment, and emotional impairment. Among the respondents, 2.6% (4 individuals) had low burnout levels, 41.6% (64 individuals) reported average burnout, 44.8% (69 individuals) experienced high burnout, and 11.0% (17 individuals) had very high burnout levels, as detailed in Table 3.

Table 2: The average overall burnout level of respondents

	Overall Burnout	Exhaustion	Mental Distance	Emotional impairment	Cognitive impairment	
N	Valid	154	154	154	154	154
	Missing	0	0	0	0	0
Mean		**2.55**	**3.03**	**2.54**	**2.24**	**2.09**
Median		2.45	3.00	2.00	3.00	2.00
Mode		2.43	3.00	2.00	3.00	1.00
Std. Deviation		.61	.74	.68	.90	.99
Variance		.37	.54	.47	.81	.98
Minimum		1.43	1.00	1.00	1.00	1.00
Maximum		4.48	4.00	4.00	4.00	4.00

Mean = average level

Table 3: Overall Burnout profile of respondents

Dimensions Burnout Level		Count (n)	Column N %
Total Core	Low	4	2.6%
	Average	64	41.6%
	High	69	44.8%
	Very High	17	11.0%
	Total (N)	154	100.0%
Emotional Exhaustion	Low	4	2.6%
	Average	50	32.5%
	High	75	48.7%
	Very High	25	16.2%
	Total (N)	154	100.0%

Mental Distance	Low	1	0.6%
	Average	86	55.8%
	High	51	33.1%
	Very High	16	10.4%
	Total (N)	154	100.0%
Emotional impairment	Low	20	13.0%
	Average	53	34.4%
	High	58	37.7%
Cognitive impairment	Very High	23	14.9%
	Total (N)	154	100.0%
	Low	70	45.5%
	Average	41	26.6%
	High	30	19.5%
	Very High	13	8.4%
	Total (N)	154	100.0%

Source: Field study, December 2023. Appendix D for categorical scores and levels.

Burnout levels according to socio-demographic information are presented in Table 4. Respondents from rural areas had an average burnout score of 2.44, those from semi-urban areas 2.54, and urban respondents 2.58. High burnout was most common among urban respondents, with 54 out of 109 reporting high levels and 12 reporting very high levels.

Madhesi respondents had the lowest average burnout score (2.35), while Adhiwasi and Janajati respondents had the highest (2.64). Brahmins and Chhetri had an average score of 2.50, and Dalit respondents scored 2.56. Among Brahmin/Chhetri respondents, 29 reported high burnout, and 8 reported very high burnout. Among Adiwashi and Janajati respondents, 9 reported very high burnout, and 31 reported high burnout. Among Dalit respondents, 6 out of 7 reported high burnout. Madheshi respondents had fewer instances of high burnout, with only 3 out of 9.

Hindu and Kirat respondents had average burnout scores of 2.56 and 2.57, respectively, compared to 2.32 for Buddhists and 2.34 for Christians. Co-supervisors had the lowest burnout score (2.46), nursing staff slightly higher (2.53), and supervisors the highest (2.69).

PCL and bachelor-passed nurses had similar burnout scores of 2.47 and 2.46, respectively, while master's degree holders scored higher at 2.83. Married respondents had higher burnout (2.64) than unmarried respondents (2.41). Among married respondents, 43 reported high burnout levels, and 13 reported very high burnout; among unmarried respondents, 26 reported high burnout, and 4 reported very high burnout levels.

Nurses without dependents had the lowest burnout score (2.50). Burnout scores increased with the number of dependents, peaking for those with 5 and 8 dependents. Nurses with two dependents had slightly lower burnout than those with one. Burnout scores also increased with years of work, with those working under two years scoring 2.47 and those working more than five years scoring 2.67. Temporary staff had higher burnout (2.66) compared to permanent staff.

Table 4: Burnout profile of respondents by socio-demographic variables

Overall burnout level					
		Low	Average	High	Very High
		Frequency	Frequency	frequency	frequency
Ecological Region	Rural	1	20	12	4
	Urban	3	40	54	12
	Semi-Urban	0	4	3	1
Ethnicity	Brahmin/Chhetri	2	38	29	8
	Adiwasi/Janajati	2	19	31	9
	Dalit	0	1	6	0
	Madhesi	0	6	3	0
Religion	Hindu	4	58	63	17
	Buddhist	0	3	2	0
	Christian	0	1	1	0
	Kirat	0	2	3	0
	Muslim	0	0	0	0
Position	Supervisor	1	5	10	1
	Co-supervisor	0	5	2	1
	Staff Nurse	3	54	57	15
Highest Degree Earned	PCL	0	14	14	2
	BA	3	40	40	6
	Masters	1	10	15	9

Marital Status	Married	1	34	43	13
	Unmarried	3	30	26	4
Nature of Employment	Permanent	4	49	51	12
	Temporary	0	15	18	5

Source: Field study, December 2023.Exhaustion

It is a state of severe loss of energy that results in feelings of both physical (tiredness, feeling weak) as well as mental (feeling drained and worn-out) exhaustion. (Schaufeli et al., 2020) Due to the demands and stressors inherent in the work environment. Findings show that the minimum exhaustion score was 1.50 among 1.3% of respondents. The maximum score of exhaustion was found to be 5.0 among 0.6% of respondents. The average score of exhaustion for all respondents was found to be 3.03 (see Table 2). Among 154 respondents, 2.6%, or four people, reported a low level of exhaustion. 32.5% of respondents, or 50 individuals, had reported an average level of exhaustion. Similarly, 48.7%, or 75 individuals, have reported high exhaustion levels. 16.2%, or 25 individuals, have been found to have a very high level of exhaustion.

Mental distance

Mental distance, or psychological detachment, refers to the ability to mentally disengage from work-related thoughts and concerns during nonwork time, allowing for relaxation and recovery (Schaufeli et al.,2020), reducing the risk of burnout, and enhancing well-being. The average score of 154 respondents on mental distance was found to be 2.54. 0.6% of respondents reported a minimum score of mental distance at 1.20, and 0.6% reported the highest score at 5. The highest number of respondents (17.50%) were found to have a mental distance score of 2.40 (see Table 2).

Emotional impairment

It is a state of intense emotional reactions and feeling overwhelmed by one's emotions. Feeling frustrated and angry at work, irritable, overreacting, upset, or sad without knowing the reason, and unable to control one's emotions (Schaufeli et al., 2020). The average score of emotional impairment was found to be 2.24. 7.1% of respondents reported a minimum score of 1.0, and 0.6% reported a maximum score of 4.80. The maximum number of respondents (11.7%) reported a score of 2.0 (see Table 2).

Cognitive impairment

Cognitive Impairment is a status of Memory issues, deficiencies in focus and attention, and subpar cognitive function. Some specific symptoms are having trouble staying

focused at work, being forgetful and absent-minded, making poor decisions, having poor memory, and having trouble thinking clearly and learning new things (Schaufeli et al., 2020). The average score of Cognitive Impairment was found to be 2.09. Among 150 respondents, 9.1% reported a low cognitive Impairment score, while 0.6% reported a high score. The minimum score was 1.0, and the high score was 5.0 (see Table 2).

Coping mechanisms

The coping mechanisms adopted by the CCU nurses were explored in fourteen dimensions. These Mechanisms were measured through a 4-point Likert scale, starting from not at all, occasionally, moderately, and a lot. Table 5 presents the descriptive statistics on various coping mechanisms employed by nurses.

Self-distraction as a coping mechanism

It involves diverting one's attention from the stressor or problem by engaging in activities or thoughts unrelated to the source of stress. This coping mechanism includes watching TV, listening to music, or engaging in hobbies to temporarily distract oneself from the stressor (McMeekin et al., 2017). Among 154 respondents, the mean score for self-distraction is 2.41, with a mode of 3.00, indicating a moderate use of this coping strategy. The standard deviation of 0.66 and variance of 0.44 suggest that responses are closely clustered around the mean.

Active coping as a coping mechanism

It is a coping strategy characterized by proactive efforts to manage stressors directly. Individuals engaging in active coping take active steps to address the problem or stressor causing distress rather than passively enduring or avoiding it. The mean value of active coping is approximately 2.80. This suggests that, on average, individuals utilize active coping strategies for dealing with burnout at a level slightly above the scale's midpoint. The median value suggests that half of the respondents are taking action to improve their situation at a moderate level. For "active coping," the standard deviation is approximately 0.91, suggesting moderate variability in responses regarding active coping strategies.

Denial as a coping mechanism

Denial is a coping mechanism characterized by refusing to acknowledge or accept the reality of a stressful situation or problem. Individuals employing denial minimize the significance of the stressor or its impact on their lives to avoid feelings of distress or discomfort (McMeekin et al., 2017). The mean for "denial" is approximately 2.09

(Table 5). This indicates that, on average, individuals tend to use denial as a coping strategy for burnout at a level slightly above two on the scale provided. The median is 2.0, which indicates that half of the observations fall below this value and half fall above it. The standard deviation is approximately 0.78334, indicating moderate variability in responses regarding the use of denial as a coping strategy or discomfort (McMeekin et al., 2017).

Substance use as a coping mechanism

It refers to the use of drugs, alcohol, or other substances as a coping mechanism to alleviate stress, emotions, or escape from reality. The value of the mean (1.24), mode (1.0), and median (1.0) indicates that the minimum number of respondents use substances like alcohol or other types of drugs to cope with burnout. 83.1 percent of respondents never use, 9.1% occasionally, and 7.8% moderately use alcohol to cope with burnout.

Use of emotional support as a coping mechanism

Using emotional support involves seeking comfort, empathy, or understanding from others in response to a stressful situation. This coping mechanism entails sharing emotions, thoughts, and concerns with trusted individuals who provide validation, empathy, and encouragement. The mean is approximately 2.37 (Table 5). This indicates that, on average, individuals tend to utilize emotional support as a coping strategy for burnout at a level slightly below the midpoint. The median value of 2.50 indicates that half of the respondents fall below the moderate value and half fall above it, since the mode value is 2, which indicates that most of the respondents moderately use emotional support to cope with burnout.

Use of instrumental support as a coping mechanism

Using instrumental support involves seeking tangible assistance, resources, or practical help from others to directly address the stressor or problem. This includes seeking advice, task assistance, or logistical support to alleviate the impact of the stressor. Since the mean is approximately 1.87 (Table 5), it suggests that, on average, individuals tend to use instrumental support as a coping mechanism for dealing with burnout at a level below the midpoint of the 4-point scale. The median value of 2.0 indicates that half of the respondents fall below the occasionally used level and half above it. A minor standard deviation indicates that the values are closer to the mean, suggesting moderate variability in responses regarding using instrumental support for coping with burnout.

Behavioural disengagement as a coping mechanism

It refers to a coping strategy characterized by actively withdrawing or disengaging from efforts to cope with stressors. Individuals using this coping mechanism may give up on dealing with the stressor and instead engage in avoidance behaviors or distractions to avoid confronting the problem (McMeekin et al., 2017). The lower mean value of 1.79 (Table 5) suggests that, on average, individuals tend to employ behavioral disengagement as a coping mechanism for burnout at a level slightly below the scale's midpoint. The median value (1.50) and mode (1.00) suggest that most of the respondents are doing their best to manage stress at an early level.

Venting as a coping mechanism

It involves expressing one's emotions, frustrations, or feelings of stress verbally or emotionally. This involves talking to others about the stressor, writing about it, or engaging in activities that allow for emotional release. The mean for "venting" is approximately 2.33 (Table 5). This suggests that, on average, individuals utilize venting as a coping strategy for dealing with burnout at a level slightly below the scale's midpoint. The median is 2.50, indicating that half of the observations fall below this value and half fall above it. For "venting," the standard deviation is approximately 0.72, signifying moderate variability in responses regarding venting as a coping strategy.

Positive reframing as a coping mechanism

It is also known as cognitive restructuring and involves cognitively reappraising or reinterpreting a stressful situation in a more positive or adaptive light (Sutharshan et al., 2021). The mean is approximately 2.80 (Table 5). This suggests that, on average, individuals utilize positive reframing as a coping strategy for managing burnout at a level slightly below the scale's midpoint. For "positive reframing," the median is 3.0, indicating that half of the respondents fall below moderately using positive reframing as a coping mechanism, and half use it a lot. The mode is 3.00, indicating that this value occurs most frequently among the observations. The standard deviation is approximately 0.91, suggesting moderate variability in responses regarding positive reframing as a coping strategy.

Planning as a coping mechanism

Planning involves developing concrete strategies or action plans to effectively address the stressor or problem. Individuals engaging in planning can break down the problem into manageable tasks, set goals, and outline steps to achieve them, enhancing their

sense of control and efficacy. The mean value for planning is approximately 2.71 (Table 5), indicating that, on average, individuals tend to utilize planning as a coping mechanism at a moderate level. The median is 3.0, indicating that half of the respondents use planning moderately or less, and half use it a lot. Here, the standard deviation is approximately 0.92, indicating moderate variability in responses regarding planning as a coping mechanism.

Humor as a coping mechanism

Humor involves using humor, jokes, or light-heartedness as a coping mechanism to alleviate stress and provide emotional relief. Humor can buffer against distress by fostering resilience, perspective-taking, and social connection. For "Humor," the mean is approximately 2.15 (Table 5). This suggests that, on average, individuals utilize humor as a coping mechanism at a level slightly above the scale's midpoint. For "humor," the median is 2.0, indicating that half of the respondents use humor as a coping mechanism below the occasional level, and half use it above the moderate level. The standard deviation for "humor" is approximately 0.73, suggesting moderate variability in responses regarding humor as a coping mechanism.

Acceptance as a coping mechanism

It involves acknowledging and accepting the reality of a stressful situation or problem without judgment or resistance. This coping mechanism entails letting go of futile efforts to change the unchangeable and embracing the present moment, equanimity, and openness. For "acceptance as a coping mechanism for burnout," the mean is approximately 3.0 (Table 5). This indicates that, on average, individuals rate acceptance as a moderately common coping mechanism for burnout. The median is 3.0, suggesting that half of the responses fall below moderately using acceptance as a coping mechanism, and half use it frequently. The standard deviation for acceptance is approximately 0.90, suggesting moderate variability in responses regarding acceptance as a coping mechanism for burnout.

Use of religious or spiritual support as a coping mechanism

Using spiritual support involves drawing upon religious or spiritual beliefs, practices, or communities as a source of comfort, strength, and meaning in response to stress or adversity (Sutharshan et al., 2021). This coping mechanism includes prayer, meditation, rituals, or seeking guidance from spiritual leaders or communities. The mean religious or spiritual support value is approximately 2.51 (Table 5). This suggests that, on average, individuals utilize religious or spiritual support moderately as a coping mechanism for

dealing with burnout. For "use of religious or spiritual support," the median is 2.50, indicating that half of the respondents use this mechanism below the occasional level and half use it above the moderate level. The standard deviation of approximately 0.84 suggests moderate variability in responses regarding using religious or spiritual support for coping with burnout.

Self-blame as a coping mechanism

Self-blame refers to attributing responsibility or fault to oneself for a stressful event or problem (McMeekin et al., 2017). Individuals engaging in self-blame criticize themselves excessively, feel guilt or shame, and internalize negative feelings about their perceived role. The mean value for self-blame is approximately 1.63 (Table 5). This suggests that, on average, respondents engage in self-blame as a coping mechanism for burnout at a level slightly above the not-at-all level. For "self-blame," the median is 1.50, indicating that half of the observations fall below occasionally used and half fall above it. The mode is 1.00, indicating that most respondents did not use self-blame as a coping mechanism. The standard deviation is approximately 0.71, suggesting moderate variability in responses regarding self-blame as a coping mechanism.

Table 5: Descriptive statistics on coping strategies/mechanisms

Strategies	Valid	Miss-ing	Mean	Median	Mode	Std. Deviation	Range	Mini-mum	Maxi-mum
Self-distraction	154	0	2.4156	2.5000	3.00	.66373	3.00	1.00	4.00
Active coping	154	0	2.8052	3.0000	3.00	.91522	3.00	1.00	4.00
Denial	154	0	2.0942	2.0000	2.00	.78334	3.00	1.00	4.00
Substance use	154	0	1.2468	1.0000	1.00	.58647	2.00	1.00	3.00
Use of emotional support	154	0	2.3734	2.5000	2.00	.68495	3.00	1.00	4.00
Use of the instrument support	154	0	1.8799	2.0000	1.50[a]	.61849	2.50	1.00	3.50
Venting	154	0	2.3377	2.5000	2.50	.72284	3.00	1.00	4.00
Positive reframing	154	0	2.7987	3.0000	3.00	.91022	3.00	1.00	4.00
Planning	154	0	2.7143	3.0000	2.00	.92683	3.00	1.00	4.00

Humor	154	0	2.1558	2.0000	2.00	.73547	3.00	1.00	4.00
Acceptance	154	0	3.0065	3.0000	3.00	.90385	3.00	1.00	4.00
Meditation	154	0	2.5097	2.5000	2.00	.84496	3.00	1.00	4.00
Self-blame	154	0	1.6331	1.5000	1.00	.71639	3.00	1.00	4.00
Behavioural Disengage-ment	154	0	1.7987	1.5000	1.00	.74868	2.50	1.00	3.50
a. Multiple modes exist. The smallest value is shown									

Source: Field study, December 2023

Correlation analysis between burnout and coping mechanisms

The correlation analysis examining the relationship between various coping mechanisms and burnout levels among Critical Care Unit (CCU) nurses is presented in Table 6. The analysis was conducted using Pearson correlation coefficients and their corresponding significance levels (two-tailed) based on a sample size of 154 respondents.

A statistically significant positive correlation was found between burnout and self-distraction ($r = 0.198$, $p = 0.014$), denial ($r = 0.286$, $p = 0.001$), substance use ($r = 0.160$, $p = 0.047$), humor ($r = 0.228$, $p = 0.004$), behavioral disengagement ($r = 0.281$, $p = 0.001$), and self-blame ($r = 0.315$, $p = 0.001$). No statistically significant correlation was observed between burnout and active coping ($r = 0.026$, $p = 0.753$), emotional support ($r = 0.031$, $p = 0.700$), instrumental support ($r = -0.096$, $p = 0.235$), venting ($r = 0.077$, $p = 0.342$), positive reframing ($r = -0.129$, $p = 0.111$), planning ($r = -0.059$, $p = 0.470$), acceptance ($r = 0.013$, $p = 0.873$), or spiritual support ($r = -0.113$, $p = 0.164$).

The results indicate that higher burnout levels among CCU nurses are associated with greater tendencies towards self-distraction, denial, substance use, humor, behavioral disengagement, and self-blame. While active coping positively correlated with burnout, it was not statistically significant, suggesting it may not significantly influence burnout levels in this context. Emotional support also did not significantly correlate, implying it may not substantially reduce burnout. Instrumental support, venting, positive reframing, planning, acceptance, and spiritual support all showed weak or no significant correlations with burnout, suggesting a limited impact on burnout levels.

Table 6: Correlation between burnout and coping mechanisms

		Burn-out	Self-dis-traction	Active coping	Denial	Sub-stance use	Use of emotional support
Burnout	Pearson Correlation	1	.198*	.026	.286**	.160*	.031
	Sig. (2-tailed)		.014	.753	.000	.047	.700
	N	154	154	154	154	154	154
Self-distraction	Pearson Correlation	.198*	1	.322**	.327**	.146	.185*
	Sig. (2-tailed)	.014		.000	.000	.070	.022
	N	154	154	154	154	154	154
Active coping	Pearson Correlation	.026	.322**	1	.204*	-.032	.143
	Sig. (2-tailed)	.753	.000		.011	.697	.077
	N	154	154	154	154	154	154
Denial	Pearson Correlation	.286**	.327**	.204*	1	.227**	.019
	Sig. (2-tailed)	.000	.000	.011		.005	.812
	N	154	154	154	154	154	154
Substance use	Pearson Correlation	.160*	.146	-.032	.227**	1	.038
	Sig. (2-tailed)	.047	.070	.697	.005		.643
	N	154	154	154	154	154	154
Use of emotional support	Pearson Correlation	.031	.185*	.143	.019	.038	1
	Sig. (2-tailed)	.700	.022	.077	.812	.643	
	N	154	154	154	154	154	154
*. Correlation is significant at the 0.05 level (2-tailed).							
**. Correlation is significant at the 0.01 level (2-tailed).							

Correlations between burnout and coping mechanisms							
		Burn-out	Use of the instrument support	Vent-ing	Positive reframing	Plan-ning	Humor
Burnout	Pearson Correlation	1	-.096	.077	-.129	-.059	.228**
	Sig. (2-tailed)		.235	.342	.111	.470	.004
	N	154	154	154	154	154	154
Use of instru-ment support	Pearson Correlation	-.096	1	.238**	.224**	.213**	.056
	Sig. (2-tailed)	.235		.003	.005	.008	.492
	N	154	154	154	154	154	154
Venting	Pearson Correlation	.077	.238**	1	.432**	.282**	.125
	Sig. (2-tailed)	.342	.003		.000	.000	.123
	N	154	154	154	154	154	154
Positive reframing	Pearson Correlation	-.129	.224**	.432**	1	.497**	.223**
	Sig. (2-tailed)	.111	.005	.000		.000	.005
	N	154	154	154	154	154	154
Planning	Pearson Correlation	-.059	.213**	.282**	.497**	1	.176*
	Sig. (2-tailed)	.470	.008	.000	.000		.029
	N	154	154	154	154	154	154
Humor	Pearson Correlation	.228**	.056	.125	.223**	.176*	1
	Sig. (2-tailed)	.004	.492	.123	.005	.029	
	N	154	154	154	154	154	154
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							

Correlations between burnout and coping mechanisms.						
		Burn-out	Behavioural Disengage-ment	Accep-tance	Use of Spiritual Support	Self-blame
Burnout	Pearson Correlation	1	.281**	.013	-.113	.315**
	Sig. (2-tailed)		.000	.873	.164	.000
	N	154	154	154	154	154
Be-havioural Disengage-ment	Pearson Correlation	.281**	1	.176*	.163*	.321**
	Sig. (2-tailed)	.000		.029	.043	.000
	N	154	154	154	154	154
Acceptance	Pearson Correlation	.013	.176*	1	.299**	-.006
	Sig. (2-tailed)	.873	.029		.000	.937
	N	154	154	154	154	154
Use of Spiritual Support	Pearson Correlation	-.113	.163*	.299**	1	.179*
	Sig. (2-tailed)	.164	.043	.000		.027
	N	154	154	154	154	154
Self-blame	Pearson Correlation	.315**	.321**	-.006	.179*	1
	Sig. (2-tailed)	.000	.000	.937	.027	
	N	154	154	154	154	154
**. Correlation is significant at the 0.01 level (2-tailed).						
*. Correlation is significant at the 0.05 level (2-tailed).						

Discussion

The burnout level

The average overall burnout level among critical care nurses at NAMS-Bir Hospital was 2.55. This score falls within the range specified for high levels of burnout (2.41-3.29) for Flemish employees (BAT-23) (Schaufeli et al., 2020), indicating that these nurses experience high burnout, though on the lower end of the Spectrum.

Burnout was assessed through four domains: emotional exhaustion, mental distance, cognitive impairment, and emotional impairment. Emotional exhaustion scored 3.03, within the high range (2.71–3.74), nearing very high levels. Mental distance averaged 2.54, placing it in the lower quarter of the high range (2.41–3.59). Emotional impairment averaged 2.24, just above the higher quarter of the average level (2.20–3.19), while cognitive impairment was 2.09, within the average range (1.81–2.59) but close to high levels. Emotional exhaustion was the highest among the four dimensions, with cognitive impairment at the upper borderline of average. Overall, burnout levels were high.

Burnout levels varied with demographic factors. Respondents from urban areas reported higher burnout compared to semi-urban and rural areas. Lucchetti et al. (2013) discussed the relationship between religion and mental disorders, and this study found a connection between burnout, caste, ethnicity, and religion. Supervisory or in-charge nurses had higher burnout (2.69) than other roles.

The relationship between educational level and burnout showed varied results. Aiken (2002) found lower burnout in higher-educated nurses, while Bakker et al. (2003) found no significant relationship in call center employees. At NAMS-Bir Hospital, nurses with a master's degree reported higher burnout (2.83) than those with a bachelor's or PCL level.

Marital status also influenced burnout, with married respondents showing higher levels (2.64) than unmarried ones (2.41), corroborating studies by Azizkhani et al. (2014) and Sinta & Dwiyanti (2023).

Experience also played a role, with nurses having over five years of experience reporting higher burnout (2.67), aligning with findings by Erjavec and Leskovic (2023). Virtanen et al. (2005) indicated that temporary workers face higher job strain and psychological distress, reflected in NAMS-Bir Hospital, where temporary nurses had higher burnout (2.66) compared to permanent nurses (2.51).

Coping mechanisms

Leiter and Maslach (2016) studied self-distraction as a coping strategy among nurses, finding that it helps manage burnout and its consequences, such as turnover intention and work-related stress. This study found a weak but statistically significant positive correlation between burnout and self-distraction ($r = 0.198$, $p = 0.014$). This suggests that as burnout levels increase, individuals are more likely to engage in self-distraction at a moderate level.

Active coping, studied by Bakker and Demerouti (2003) and McVicar (2003), was identified as a strategy to manage stress and prevent burnout. However, in the context of NAMS-Bir Hospital, this study found a weak positive correlation between burnout and active coping, which was not statistically significant. Despite this, descriptive data indicate that nurses utilize active coping strategies moderately.

Denial as a coping mechanism was examined by Chang and Bidewell (2011), Hamaideh (2011), and Adriaenssens et al. (2015). While denial can provide temporary relief, they found that it may hinder long-term coping. This study found a moderate, statistically significant positive correlation between burnout and denial ($r = 0.286$, $p = 0.001$), suggesting that higher burnout levels lead to more frequent use of denial.

Substance use as a coping mechanism, discussed by Bakker and Heuven (2006) and Khawa (2021), highlighted its prevalence and implications for healthcare professionals. In NAMS-Bir Hospital, a weak but statistically significant positive correlation was found between burnout and substance use ($r = 0.160$, $p = 0.047$), indicating a tendency for increased substance use with higher burnout levels.

As studied by Poghosyan et al. (2009), emotional support refers to seeking empathy and understanding from others. This study found a weak, non-significant positive correlation between burnout and emotional support, suggesting a limited impact on burnout levels. Nonetheless, respondents used emotional support occasionally to a moderate extent.

As Van & Rothmann (2014) examined, Instrumental support involves tangible assistance in coping with stressors. This study found a weak, non-significant negative correlation between burnout and instrumental support, indicating no strong relationship. However, nurses in the CCU used instrumental support occasionally.

A study by Zapf, Seifert, Schmutte, Mertini, and Holz (2001) explored various coping strategies, including behavioral disengagement, and their relationship with burnout among healthcare professionals. Behavioral disengagement involves mentally

withdrawing or giving up efforts in response to stressors. For nurses in the CCU of NAMS-Bir Hospital, a moderate positive correlation exists between burnout and behavioral disengagement, significant at the 0.01 level. This suggests that individuals increasingly use behavioral disengagement as a coping mechanism as burnout levels rise. According to Table 4.6, individuals employ behavioral disengagement slightly below the occasional extent, indicating that most respondents use it occasionally to manage burnout.

Bakker and Heuven (2006) studied venting as a coping mechanism, finding that it temporarily releases stress and helps manage emotional demands in high-stress environments. Their study indicated that emotional dissonance was positively related to burnout among nurses. Venting was used moderately at NAMS-Bir Hospital. However, the correlation between burnout and venting was weak and not statistically significant, implying little to no relationship between burnout and the tendency to vent emotions.

Mealer et al. (2009) investigated positive reframing, which involves focusing on the positive aspects of stressful situations to mitigate negative impacts. Their study found positive reframing was associated with lower emotional exhaustion and depersonalization levels. In NAMS-Bir Hospital, positive reframing was used moderately. However, the correlation between burnout and positive reframing was weak and not statistically significant, suggesting no strong relationship between burnout and positive reframing.

Planning as a coping mechanism involves proactive efforts to address stressors, helping individuals manage workload and maintain control. Adriaenssens, De Gucht, and Maes (2015) found that higher levels of planning were associated with lower levels of emotional exhaustion and depersonalization. At NAMS-Bir Hospital, planning was utilized at a moderate level, with a weak negative correlation to burnout that was not statistically significant, indicating little to no relationship between burnout and planning.

Humor is a coping strategy that mitigates the adverse effects of burnout by fostering resilience and job satisfaction. Nezlek and Derks (2001) studied humor as a coping mechanism and found it beneficial. At NAMS-Bir Hospital, humor was used moderately, with a moderate positive correlation to burnout significant at the 0.01 level, indicating that higher burnout levels lead to a greater tendency to use humor as a coping mechanism.

Acceptance, studied by Hülsheger et al. (2013), involves acknowledging stressful aspects without judgment and was associated with lower burnout levels and better mental health outcomes. At NAMS-Bir Hospital, acceptance was a moderately common coping mechanism with a weak, non-significant positive correlation to burnout, suggesting little to no relationship between burnout and acceptance.

Curlin et al. (2005) and Daaleman (2004) studied spiritual or religious support as a coping mechanism, effectively reducing burnout symptoms and enhancing resilience. At NAMS-Bir Hospital, spiritual support was used occasionally to moderately, with a negative correlation to burnout that was not statistically significant, indicating little to no relationship between burnout and spiritual support.

Self-blame, studied by Hunsaker et al. (2015), was associated with higher burnout levels among nurses. At NAMS-Bir Hospital, respondents engaged in self-blame slightly above the "not at all" level, with a strong positive correlation to burnout significant at the 0.01 level, indicating that higher burnout levels lead to increased self-blame.

Conclusion

Nurses in critical care units are particularly vulnerable to high levels of burnout. This study assessed nurses' burnout levels and coping mechanisms at NAMS-Bir Hospital's critical care unit. The overall burnout level was high, with an average score of 2.55. Burnout was assessed across four dimensions: emotional exhaustion (3.03), mental distance (2.54), emotional impairment (2.24), and cognitive impairment (2.09).

Nurses from urban areas or those who have lived in urban settings for extended periods exhibited higher burnout levels. Burnout was also higher among Adiwashi/Janajati nurses (2.63) and supervisors (2.69). Nurses with a master's degree reported higher burnout (2.83) than those with bachelor's or PCL degrees. Married nurses had higher burnout levels (2.64) compared to unmarried nurses. Burnout was associated with the number of dependents, work experience, and employment status, with temporary or contract nurses showing higher burnout (2.66) than permanent employees.

Coping strategies were examined across fourteen dimensions. Significant correlations were found between burnout and the use of humor, self-distraction, denial, substance use, self-blame, and behavioral disengagement. There was little to no relationship between burnout and acceptance, planning, active coping, emotional support, positive reframing, venting, spiritual, and instrumental support.

Self-distraction was moderately used, showing a significant positive correlation with burnout ($r = 0.198$, $p = 0.014$). Active coping and denial were also moderately used,

showing a significant correlation ($r = 0.286$, $p = 0.001$). Substance use had a weak but significant positive correlation with burnout ($r = 0.160$, $p = 0.047$), although most respondents did not use substances. Emotional support was moderately used but showed no significant correlation ($r = 0.031$, $p = 0.700$). Instrumental support was minimally used and showed a weak negative correlation ($r = -0.096$, $p = 0.235$).

Behavioral disengagement was used moderately and showed a significant positive correlation ($r = 0.281$, $p = 0.001$). Venting was moderately used, with a weak positive but insignificant correlation ($r = 0.077$, $p = 0.342$). Positive reframing was used above moderate levels but showed a weak, non-significant negative correlation ($r = -0.129$, $p = 0.111$). Planning was moderately used, with a weak negative correlation ($r = -0.059$). Humor showed a significant positive correlation with burnout ($r = 0.228$, $p = 0.004$). Acceptance had a very weak positive correlation ($r = 0.013$). Spiritual support showed a weak negative correlation ($r=-0.113$). Self-blame had a strong positive correlation with burnout ($r = 0.315$, $p = 0.001$).

The findings indicate that higher burnout levels are linked to greater tendencies towards self-distraction, denial, and substance use. Active coping did not significantly influence burnout levels. Emotional support was not effective in reducing burnout. There was no strong relationship between burnout levels and instrumental support, venting, positive reframing, planning, acceptance, or spiritual support. However, humor, behavioral disengagement, and self-blame were significantly correlated with higher burnout levels, suggesting these coping mechanisms are more prevalent as burnout increases.

Implications of the study

The implications of this study extend to the organizational level, particularly within healthcare settings. While the findings of this study offer insights that may align with various scenarios, it is important to note that they cannot be universally applied or generalized. However, these findings are relevant for informing policy development within institutions such as NAMS-Bir Hospital and similar healthcare settings.

Contribution/s

The primary author contributed to the conceptualization, research process, drafting, data management, and analysis of the findings. The corresponding author contributed to the conceptualization and analysis of the findings. The remaining author was involved in the research process, data collection, and drafting. All authors collaboratively prepared the final draft of this paper.

Ethical considerations

The study received approval from the Institutional Review Board of NAMS-Bir Hospital (Ref no. 2-080/081, 351/2080/81). The written consent of the respondents was obtained before the interview. The overall research process was bound by or followed the Statistical Act of Nepal 2022. The basic human rights principle was considered during the process.

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Declaration of interest statement

There is no stated conflict of interest on the part of the author/s.

Data availability statement

The datasets generated and/or analyzed during the current study are publicly available. They can be accessed at 10.6084/m9.figshare.28102547.

References

Adriaenssens, J., De Gucht, V., & Maes, S. (2015). Determinants and prevalence of burnout in emergency nurses: A systematic review of 25 years of research. *International Journal of Nursing Studies, 52*(2), 649–661. https://doi.org/10.1016/j.ijnurstu.2014.11.004

Aiken, L. H. (2002). Hospital Nurse Staffing and Patient Mortality, Nurse Burnout, and Job Dissatisfaction. *JAMA*, *288*(16), 1987. https://doi.org/10.1001/jama.288.16.1987

Azizkhani, R., Ahmadi, O., & Basravi, M. (2014). Correlation between workplace and occupational burnout syndrome in nurses. *Advanced Biomedical Research*,*3*(1), 44. https://doi.org/10.4103/2277-9175.125751

Bakker, A. B., &Heuven, E. (2006). Emotional dissonance, burnout, and in-role performance among nurses and police officers. *International Journal of Stress Management, 13*(4)*,* 423–440. https://doi.org/10.1037/10725245.13.4.423

Bakker, A., Demerouti, E., &Schaufeli, W. (2003). Dual processes at work in a call centre: An application of the job demands–resources model. *European Journal of Work and Organizational Psychology*, *12*(4), 393–417. https://doi.org/10.1080/13594320344000165

Baral, S., &Subedi, S. (2021). Stress: How is it Affecting Service Delivery and Health of Nurses? A Qualitative Study from Pokhara Metropolitan, Nepal. *Journal of Health and Allied Sciences, 11*(1), 24–29. https://doi.org/10.37107/jhas.202

Chang, E. and Bidewell, J. W.(2011). Managing dementia agitation in residential aged care. *Dementia*, *10*(3), 299–315. https://doi.org/10.1177/1471301211407789

Curlin, F. A., Lantos, J. D., Roach, C. J., Sellergren, S. A., & Chin, M. H. (2005). Religious characteristics of U.S. physicians. *Journal of General Internal Medicine, 20(7)*, 629–634. https://doi.org/10.1111/j.1525-1497.2005.0119.x

Daaleman, T. P. (2004). The Spirituality Index of Well-Being: A New Instrument for Health-Related Quality-of-Life Research. *The Annals of Family Medicine, 2(5)*, 499–503. https://doi.org/10.1370/afm.89

Freudenberger, H. J. (1974). Staff burn-out. *Journal of Social Issues*, *30*(1), 159–165. https://doi.org/10.1111/j.1540-4560.1974.tb00706.x

Freudenberger, H. J. (1975). The staff burn-out syndrome in alternative institutions. *Psychotherapy: Theory, Research & Practice,* 12(1), 73–82. https://doi.org/10.1037/h0086411

Freudenberger, H. J. (1977). Burn-out: Occupational hazard of the child care worker. *Child Care Quarterly*, *6*(2), 90–99 https://doi.org/10.1007/bf01554695

Freudenberger, H. J., &Richelson, G. (1981). *Burn-out: The high cost of high achievement*. Bantam Books.

Gautam, S. (2023). An ethnographic inquiry of the reasons and factors behind ayurvedic healing practices. *Innovative Research Journal*, *3*(2), 11–22. https://doi.org/10.3126/irj.v3i2.61794

Ginsburg, S. G. (1974). The problem of the burned-out executive.

Hamaideh, S. H. (2011). Occupational stress, social support, and quality of life among Jordanian Mental Health Nurses. *Issues in Mental Health Nursing*, *33*(1), 15–23. https://doi.org/10.3109/01612840.2011.605211

Heinemann, L. V., & Heinemann, T. (2017). Burnout research: Emergence and scientific investigation of a contested diagnosis. *SAGE Open*, 7(1). https://doi.org/10.1177/2158244017697154

Hülsheger, U. R., Alberts, H. J., Feinholdt, A., & Lang, J. W. (2013). Benefits of mindfulness at work: The role of mindfulness in emotion regulation, emotional exhaustion, and job satisfaction. *Journal of Applied Psychology*, *98*(2), 310.

Hunsaker S, Chen HC, Maughan D, Heaston S. (2015). Factors that influence the development of compassion fatigue, burnout, and compassion satisfaction in emergency department nurses. *J NursScholarsh*. 47(2):186-94.

Khawa, S. P. (2021). Burnout and coping strategies among nurses: A literature review. *International Journal of Practical Nursing, 9(2)*, 31–35. https://doi.org/10.21088/ijpn.2347.7083.9221.1

Kuruva, M. (2017). To assess the perceived burnout symptoms and coping strategies among critical care nurses in selected hospitals of Pune City with a view develop an information booklet on burnout management. *Journal of Health Policy & Outcomes Research,* 1, 48–58.https://doi.org/10.7365/jhpor.2017.1.6

Leiter, M.P. &Maslach, C. (2016). Understanding the burnout experience: recent research and its implications for psychiatry. World Psychiatry, 15: 103-111. https://doi.org/10.1002/wps.20311

Lucchetti, G., de Oliveira, L. R., Koenig, H. G., Leite, J. R., &Lucchetti, A. L. (2013). Medical students, spirituality, and religiosity-results from the multicenter study SBRAME. *BMC Medical Education, 13(1).* https://doi.org/10.1186/1472-6920-13 162Lynn,

Marshall, J. C., Bosco, L., Adhikari, N. K., Connolly, B., Diaz, J. V., Dorman, T., Fowler, R. A., Meyfroidt, G., Nakagawa, S., Pelosi, P., Vincent, J. L., Vollman, K., & Zimmerman, J. (2017). What is an intensive care unit? A report of the task force of the World Federation of Societies of Intensive and Critical Care Medicine. *Journal of critical care*, 37, 270–276. https://doi.org/10.1016/j.jcrc.2016.07.015

Martínez, J. P., Méndez, I., Ruiz-Esteban, C., Fernández-Sogorb, A., &García Fernández, J. M. (2020). Profiles of Burnout, Coping Strategies and Depressive Symptomatology. *Frontiers in Psychology,* 11. https://doi:10.3389/fpsyg.2020.0059

McMeekin DE, Hickman RL, Douglas SL, Kelley CG (2017). Stress and coping of critical care nurses after unsuccessful cardiopulmonary resuscitation. *American Journal of Critical Care 26*(2),128–35.

McVicar, A. (2003). Workplace stress in nursing: a literature review. *Journal of Advanced Nursing, 44*(6), 633–642. https://doi.org/10.1046/j.03092402.2003.02853.x

Mealer, M., Burnham, E. L., Goode, C. J., Rothbaum, B., & Moss, M. (2009). The prevalence and impact of post-traumatic stress disorder and burnout syndrome in nurses. *Depression and Anxiety, 26*(12), 1118–1126.https://doi.org/10.1002/da.20631

Mehta, R. K., & Singh, I. K. (2015). Stress among nurses working in critical care areas at a tertiary care teaching hospital, Nepal. *Journal of Chitwan Medical College*, *4*(4), 42– 48. https://www.nepjol.info/index.php/JCMC/article/view/11972

Najimi A, Goudarzi AM, Sharifirad G. (2012). Causes of job stress in nurses: A cross-sectional study. *Iran J Nurs Midwifery Res 17*(4), 301-5.

Nezlek, J. B., &Derks, P. (2001). Use of humor as a coping mechanism, psychological adjustment, and social interaction. *HUMOR.14*(4)*,* 395-413. https://doi.org/10.1515/humr.2001.011

Poghosyan, L., Aiken, L. H., & Sloane, D. M. (2009). Factor structure of the Maslach burnout inventory: An analysis of data from large-scale cross-sectional surveys of nurses from eight countries. *International Journal of Nursing Studies, 46*(7), 894–902. https://doi.org/10.1016/j.ijnurstu.2009.03.004

Sandín, B., &Chorot, P. (2003). Cuestionario de afrontamiento del estrés (CAE):desarrollo y validaciónpreliminar. *Revista De Psicopatología Y Psicología Clínica*, *8*(1). https://doi.org/10.5944/rppc.vol.8.num.1.2003.3941

Schaufeli, W. B., Desart, S., & De Witte, H. (2020). Burnout assessment tool (BAT)—development, validity, and reliability. *International Journal of Environmental Research and Public Health*, *17*(24), 9495.https://doi.org/10.3390/ijerph17249495

Schaufeli, W. B., Leiter, M. P., &Maslach, C. (2009). Burnout: 35 years of research and practice. *Career Development International*, *14*(3), 204–220. https://doi.org/10.1108/13620430910966406S2CID

Sharma, I., Misra, A., Kumar Shrestha, B., Kumar Koirala, A., Banjade, A., & Banjade, P. (2021). Depression, Anxiety, and Stress among Nepali Health Care Workers during the Coronavirus Disease 2019 Pandemic: A Cross-sectional Survey. *JNMA; Journal of the Nepal Medical Association*, *59*(238), 580–584. https://doi.org/10.31729/jnma.6747

Shrestha, M. V., Manandhar, N., & Joshi, S. K. (2021). Burnout among healthcare professionals in Nepal: An analytical study. *International Journal of Occupational Safety and Health*, *11*(2), 89–94. https://doi.org/10.3126/ijosh.v11i2.37259

Siddiqui S., Pandey A., Roshan Kumar Roy et al. (2023). Assessment of Burnout Status Among Medical Students of Nepal: A Descriptive Cross-Sectional Survey, PREPRINT (Version 1) available at Research Square https://doi.org/10.21203/rs.3.rs- 2470697/v1

Sinta, Lydia &Dwiyanti, Endang. (2023). Relationship between marital status and mental workload with work stress for work-from-home workers. *The Indonesian Journal of Occupational Safety and Health 12*. 185-193. https://doi.org/10.20473/ijosh.v12i2

Smith, S. E. (2013-03-24). Bronwyn Harris (ed.). "What is an ICU?". *wiseGEEK*. Sparks, Nevada: Conjecture Corporation.

Sutharshan, N., Nufais, M., Shrirajanie, N., Abdul Munaff, M., &Kisokanth, G.(2021). Perceived work-related stress and coping strategies among critical care nurses – A preliminary study from Sri Lanka. *International Journal of Occupational Safety and Health*, *11*(2), 95–99. https://doi.org/10.3126/ijosh.v11i2.36139

Umutoni, E., Nankundwa, E., Sego, R., & Bhengu, B. (2017). Burnout among nurses working in critical care settings: A case of a selected tertiary hospital in Rwanda. *International Journal of Research in Medical Sciences, 5*(12), 5121–5126. https://doi.org/10.18203/2320-6012.ijrms20175430 van der Colff, J. J., &Rothmann,

Virtanen, M., Kivimäki, M., Joensuu, M., Virtanen, P., Elovainio, M., &Vahtera, J. (2005). Temporary employment and health: a review. *International Journal of Epidemiology, 34(3)*, 610–622. https://doi.org/10.1093/ije/dyi024

WHO (2019b, May 28). Burn-out as an "occupational phenomenon": International Classification of Diseases. Retrieved May 15, 2023.

World Health Organization. (1992). *The ICD-10 classification of mental and behavioural disorders: clinical descriptions and diagnostic guidelines*. World Health Organization.

World Health Organization. (2019). Burn-out is an "occupational phenomenon" International Classification of Diseases. Retrieved from: https://www.who.int/news/item/28-05- 2019-burn-out-an-occupational phenomenon-international-classification-of-diseases.

Zapf, D., Seifert, C., Schmutte, B., Mertini, H., &Holz, M. (2001). Emotion work and job stressors and their effects on burnout. *Psychology & Health*, *16*(5), 527-545. https://doi.org/10.1080/08870440108405525.