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Work-related stress among nurses: a comparative cross-sectional study of two government hospitals in Ghana

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Abstract

Background Occupational stress is increasing globally and affecting all workplaces and countries' health professionals. Despite its significant impact on healthcare delivery, limited studies have actually compared the prevalence, causes, effects, and coping strategies of stress among nurses working in hospitals with variation in capacity and function in Ghana. We, therefore, examined and compared the prevalence, causes, effects and coping strategies of occupational stress among nurses working in a secondary care and tertiary hospital in Ghana.

Methods We conducted a health facility-based cross-sectional study among 248 nurses from two hospitals (Volta Regional Hospital [VRH] and Ho Teaching Hospital [HTH]). The Perceived Stress Scale (PSS) and Weiman Occupational Stress Scale (WOSS) were used to measure the nurses' stress levels and causes of occupational stress respectively. A self-reported checklist was used to measure both the effects of stress and strategies. Descriptive analyses and t-tests were performed, and statistical significance was measured at the 0.05 level.

Results The majority of nurses 77.8% experienced a moderate level of perceived stress. The total individual mean scores of the nurses from the two hospitals (VRH = 3.02 and HTH = 3.09) were 34% and 37% respectively higher than the established WOSS individual average of 2.25. Nursing difficult patients (t=-1.1196, $p = 0.037$), Unfriendly relationships with superiors, colleagues, and subordinates (t=-2.3333, $p = 0.020$), working with incompetent staff (t=-1.3129, $p = 0.037$) were the statistically significant stressors among nurses in the HTH. Whereas, long work hours (t = 2.0841, $p = 0.038$) and needle-stick injuries (t = 2.6669, $p = 0.008$) were the statistically significant stressors among nurses from the VRH. Headache (VRH = 73.8% and HTH = 97.9%), Fatigue (VRH = 68.9% and HTH = 83.5%), Frustration VRH = 50.5% and HTH = 68.3%) and Lack of Concentration (VRH = 81.6% and HTH = 80.0%) were most common effects of occupational stress reported.

Conclusion The majority of nurses reported moderate levels of stress, with the two institutions' stressors differing. Key causes of stress were needle stick injuries, long hours, dealing with challenging patients and strained interpersonal relationships. Common side effects were headaches, exhaustion, irritability, and trouble focusing. To accelerate progress towards achieving the sustainable development goal (SDG) 3.4 of promoting mental health and

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well-being by 2030, the 2012 Mental Health Act of Ghana and the Occupational Health and Safety Regulations, should fully and effectively be implemented in health facilities across the country.

Keywords Mental Health, Occupational stress, Prevalence, Nurses, Ghana, Ho Teaching Hospital, Volta Regional Hospital

Introduction

Globally, the prevalence of occupational stress has been on the ascendency over the past three decades and negatively impacted the health of employees, including nurses [1]. Health professionals play a critical role in improving population access to and the quality of health care. The world's health professionals are composed of about 50% of nurses and midwives [2]. Occupational stress signifies the physical and emotional reactions which arise when workers notice a mismatch between their effort and the corresponding reward [2]. Occupational stress has lately been linked to 90% of medical visits, prompting the World Health Organization to label it a global pandemic [3]. Its impact on healthcare service delivery includes poor quality of care given to patients, negligence, absenteeism, giving up on the profession, and abandonment [4]. Some cross-sectional studies have revealed that increased workload and weariness were especially common among frontline healthcare professionals who volunteered as members of the COVID-19 outbreak response team [5–10].

During the COVID-19 pandemic age, occupational stress has grown increasingly prevalent at numerous healthcare institutions in Ghana [11].It has also been stated that stress causes burnout in about 71 per cent of health professionals, the majority of which are females, specifically nurses [12]. Adzakpah, Laar, and Fiadjoe [13] found that nurses at St. Dominic Hospitals in Akwatia, Ghana, were 10% more stressed than the general population. The aggravating component of the problem is that due to increased demand for care, nurses' expectations have grown. A cross-sectional study by Kaburi et al. (2016) found that 25% of nurses experienced high to extreme levels of occupational stress [14] Osei-Mireku et al. (2020) in their study to find out the level of stress among nurses at the Tamale Teaching Hospital (TTH) found that nurse was 29% more stressed than the general population [15].

Nurses experience occupational stress regularly, which has serious consequences for the provision of healthcare. Research carried out in different parts of Ghana has brought attention to the levels of stress that nurses face, which affect their mental health, productivity, and standard of patient care [13, 14, 16, 17]. Excessive workload, a lack of institutional support, difficult relationships with superiors, manual lifting of patients and equipment, infection risks, inadequate feedback, limited opportunities for professional development and coworkers are some of the factors that contribute to this stress [14, 17]. Particularly, Adzapkah et al. (2016) identified that inadequate motivation (98.6%), understaffing (91.8%), handling a heavy patient load alone (83.6%), missing breaks during shifts (82.2%), and coping with challenging patients (71.3%) were the main causes of mentioned by nurses [13].

Occupational stress among nurses has significant consequences, as documented by various studies, including both negative effects and potential coping mechanisms. Dartey et al. (2023) identified both negative effects like mental health issues, general body pain and fatigue, mental health problems, and positive coping mechanisms such as diversional therapy and psychological support from colleagues [16]. Ellison (2022) found that a high level of occupational stress was positively correlated with social relationships and psychological well-being, recommending the employment of counselling psychologists [17]. Thamina et al., (2023) identified mild to moderate stress levels among nurses in secondary hospitals, linking stress to factors like the inability to take breaks and sudden changes in work schedules [18]. Ellison (2022) also explored coping strategies and the influence of occupational stress on psychological well-being and social relationships in the same region, advocating for more support for nurses [17]. Boakye et al. (2022) examined stress factors at the African Methodist Episcopal Zion Hospital, finding stressors like workload and role ambiguity, which led to reduced productivity and poor work relations [19]. Kaburi et al. (2019) also documented that the effects of occupational stress included increased rates of absenteeism [14].

This means that despite the 2012 Mental Health Act which ensures the creation of a suitable stress-free work atmosphere for health professionals by enacting policies that check the wellbeing of health personnel and assess their risk of work-related, stress may be harmful to various organizations in Ghana.

To provide effective healthcare to patients, health professionals must be in a stable mental state; yet occupational stress can render health professionals ineffective, resulting in poor healthcare [20]. Although several studies in Ghana have delved into the prevalence, causes, effect and coping strategies of occupational stress among nurses, healthcare demand and referral patterns due to Geographical and administrative distinctions can suggest a high workload and stress among its nursing staff. Limited studies have compared work-related stress among

secondary and tertiary hospitals. This study therefore examined and compared the prevalence, causes, effects and coping strategies of occupational stress among nurses working in secondary care (VRH) and tertiary (HTH) hospitals in the Volta Region, Ghana. By comparing collected data from these hospitals, the study findings will inform regional healthcare planning and resource allocation for a healthier nursing workforce which is also crucial to reducing occupational stress among nurses thereby promoting the mental health and well-being of nurses which is vital to realizing the SDG target 3.4.

Methods

Study design and study setting

This was a cross-sectional study among 248 nurses working in two government hospitals located in the Hohoe and Ho municipalities of the Volta region of Ghana. The Ho Municipality is bordered on the south by the Adaklu and Agotime Ziope Districts, on the north and west by Ho West District, and on the east by the Republic of Togo [21]. Whereas, the Hohoe Municipality shares a boundary with the Guan district of the Oti region to the north and the Afadzato south district to the south with only one government Hospital which is the VRH [22]. In the Ho Municipality of Ghana, there are four public hospitals namely HTH, Ho Municipal Hospital (HMH), Ho Polyclinic (HP), and the Volta Military Hospital (VMH) [21]. The HTH is a 320-bed referral healthcare facility staffed with 650 personnel, including 367 nurses and midwives [16]. The HTH is a major referral facility serving the region and neighbouring West African countries Strategically located to offer specialized healthcare to the Volta Region, it features approximately 20 major wards and units [16]. The VRA on the other hand has a bed capacity of 178 with 467 staff including 293 nurses and Midwives, and it is the referral point for very ill patients from other clinics and hospitals within and outside the Hohoe Municipality. Most of the referrals come from the eight northern districts of the region: Nkwanta North, Nkwanta South, Krachi East, Krachi West & Nchumuru, Kadjebi, Biakoye, Afadzato South, and Jasikan districts, including neighbouring Togo. Both hospitals primarily focus on curative care, including both clinical and preventive services such as health promotion. They provide 24-hour accident and emergency services, outpatient consultations, and inpatient care. The differences in hospital capacities and functions between HTH and VRH highlight the necessity of this study because the breadth and depth of services differ and may influence the nature of occupational stress experienced by nurses [23, 24]. Nurses in tertiary care settings like HTH might experience stress related to high patient acuity, complex cases, and the demands of specialized care. In contrast, nurses in secondary care settings like VRH might face stress due to resource limitations, high patient volumes, and the need to manage a wide range of medical conditions with fewer specialized resources.

Study population

The study included all nursing cadre such as Community Health Nurses, Professional nurses, Enrolled nurses, and Professional midwives from the VRH and HTH who are 18 and above. Inclusion criteria were registered nurses providing direct patient care with at least two (2) years of experience. Nurses on leave, in administrative roles, students, assistants, and interns were excluded.

Sample size

The sample size was determined using a Cochran formula [25]. The formula is given as $n = (\mathbf{Z_{\alpha/2}})^2\mathbf{P\ (1\text{-}P)} / \mathbf{e}^2$. Where, $p=0.10$ is the prevalence of stress among nurses (Adzakpah et al., 2016), n = Sample size to be determined, $\mathbf{e^2=0.05}$, and $Z_{\alpha/2} = 1.96$. The sample size calculated was 138. To account for the response rate, we allowed a 5% non-response rate giving us a total sample size of 145. The estimated sample size was found to be less than 5% of their respective total populations (367 for HTH and 293 for VRH), obviating the need for a finite population correction (FPC) as per standard statistical practice [26]. Hence, this study estimated a sample size of 145 each for the two hospitals. However, 248 nurses returned the questionnaire giving a response rate of 85.5%. At VRH, all 145 administered questionnaires were administered, resulting in a response rate of 100%. At HTH, 103 out of 145 administered questionnaires were returned, yielding a response rate of 71%.

Sampling

At each hospital, permission was sought from the human resource directorate and access was granted to the staff nominal roll. The nominal roll was then re-arranged into the different departments. The proportion contribution of each department to the overall staff population was calculated and then used to determine how many subjects responded to the questionnaire for each department based on the sample size. Random number statistical tables were used to determine the respondents for each department to administer the questionnaire. In cases where the randomly selected staff was not available, a replacement was done with the same technique.

Study variables

Occupational stress was the main outcome variable in our study. It was derived as an index variable from the PSS questionnaire had 10 items. The questionnaire was designed by Cohen et al. (1983) to measure the degree to which situations in one's life are appraised as stressful. In this study, the reliability coefficient of the scale for PSS

scale was 0.71. It was measured on a 5-point Likert scale with responses ranging from 0 (Never) to 4 (Very often). The total score of the PSS ranged between 0 (No stress experiences and 40 (highest degree of stress experienced) [27].

The covariates included the respondents' age, sex, religion, ethnicity, marital status, and years of work experience. This WOSS scale was used to measure the causes of occupational stress [13]. It is aimed at determining the causes of occupational stress among nurses in the two hospitals. Respondents were asked if: Engaging in an unfriendly relationship, Nursing 'difficult' patients, Harassment from aggressive relatives, Nursing patients without relatives, working with incompetent staff, and Inadequate delegation of responsibilities caused them to feel stressed. The response options for these questions were 1 indicating never, 2 indicating seldom, 3 indicating sometimes, 4 indicating frequently, and 5 indicating almost always. The reliability coefficient of the scale for WOSS scale was 0.82. A similar instrument was used in similar research by Adzapkah et al. (2016) in their study to determine the current level of occupational stress experienced by nurses and the most common occupational stressors [13]. A self-reported checklist or survey was used to assess the effects of occupational stress on the health worker's health. The questionnaire includes three sections: physical effects, emotional effects, and psychological effects. Participants are asked to indicate whether they have experienced each effect by ticking the appropriate box, with "1" representing "Yes" and "2" representing "No". Further, coping strategies for stress among Nurses were also measured. Participants in the study were asked to choose and rank the most often used stress management methods from a list shown to them.

Data collection procedure

Data was gathered using a standardized, closed-ended survey questionnaire study instrument which was adapted from a study by [13].

The mode of data collection was face-to-face for Nurses in the VRH (VRH). However, nurses from the HTH were selected and asked to complete the questionnaire and return on their own. Face-to-face interviews at VRH aimed to maximize engagement and response rates by allowing for direct interaction, clarifying questions in real time, and ensuring comprehensive data capture. Whereas, self-administered questionnaires at HTH were chosen to accommodate the structured environment and busy schedules of nurses to enhance data completeness and minimise social desirability bias. These methodological choices were made to mitigate biases specific to each approach, optimize resource utilization, and maintain methodological consistency across settings, thereby supporting robust comparisons of the effects of occupational stress in diverse healthcare environments.

Data analyses

Data were analysed with STATA version 17.0. Data were summarized into frequencies, means and standard deviation. The PSS scores were categorized where a total score of 0 to 13 represented low-stress prevalence, 14 to 26 signified moderate stress prevalence, and 27–40 represented high-stress prevalence [27]. The WOSS was graded by adding up the total number of points for each of the 15 questions and then dividing the total by 15. The score range for a subject is 145 to 15, with 145 being the highest and 15 being the lowest. The greater the score, the higher the level of occupational stress [13].

To establish the associations between variables, p-values less than 0.05 were considered statistically significant at a 95% confidence interval. A T-test was used to determine stressors that were significant at the hospitals from the two municipalities.

Ethical issues

Ethical approval for this study was sought from the Ethical Committee of the Ghana Institute of Management and Public Administration (GIMPA) and the University of Health and Allied Sciences (UHAS) for both HTH and VRH respectively. The protocol identification number GIMPA-REC A. [013] 21–22 and UHAS-REC A.9[75] 20–21. Furthermore, informed consent was acquired from each study participant before the commencement of work, with a guarantee of confidentiality and anonymity of the data, by ethical norms for medical research involving human subjects. The principal investigator enrolled 248 subjects and invited them to participate willingly with the option to withdraw at any time. Our research was carried out in conformity with the Helsinki Declaration's ethical criteria [28].

Results

Socio-demographic characteristics of respondents

The study involved 248 nurses (145 from VRH and 103 from HTH) Of these,64.9% were females. The mean (±SD) age of nurses was 29.7±5.2 years (28.8±5.1 for VRH and 31.1±5.1 for the Ho hospitals). Approximately half, 50.3% and 62.1% of the nurses in VRH and HTH were single, respectively (Table 1).

Prevalence of occupational stress among nurses

A moderate level of occupational stress was perceived by 77.8% of nurses. Low and high levels were perceived by 17.7% and 4.4% respectively (Fig. 1). Table 2 below also shows the prevalence of occupational stress by socio-demographic characteristics of respondents. The religion

Table 1 Sociodemographic characteristics of nurses at the VRH and HTH facilities enrolled in the study

Variables		VRH (*n* = 145)	HTH (*n* = 103)	Total (*N* = 248)	*P*-value
		[M ± SD]	[M ± SD]		
Age (years)		**[28.8 ± 5.1]**	**[31.1 ± 4.9]**	**[29.7 ± 5.2]**	**0.0014**[1]
		***n* (%)**	***n* (%)**	***n* (%)**	***P*-value**
Age group					0.029[3]
	19–29	91(62.8)	50(48.5)	144 (56.8)	
	30–39	52(35.8)	47(45.6)	99(40.0)	
	40–50	2(1.4)	6(6.0)	8(3.2)	
Sex					0.264[2]
	Male	55(37.9)	32(31.1)	87(35.1)	
	Female	90(62.1)	71(68.9)	161(64.9)	
Religion					0.001[3]
	Christian	125(86.2)	101(98.1)	226(91.1)	
	Islam	20(13.8)	2(1.9)	22(8.9)	
Ethnicity					0.041[3]
	Akan	54(37.2)	28(27.1)	82(33.1)	
	Ewe	80(55.2)	56(54.4)	136(54.8)	
	Ga/Dangme	8(5.5)	11(10.7)	19(7.7)	
	Others	3(2.1)	8(7.8)	11(4.4)	
Marital Status					0.052[2]
	Single	72(49.7)	64(62.1)	136(54.8)	
	Married	73(50.3)	39(37.9)	112(45.2)	
Years of Experience					0.016[3]
	Less than 5	88(60.7)	56(54.4)	144(58.0)	
	5–10	50(34.5)	31(30.1)	81(32.7)	
	11–15	7(4.8)	12(11.7)	19(7.7)	
	Above 15	0(0.0)	4(3.9)	4(1.6)	

[1]Wilcoxon rank sum test, [2]Chi-Square *P*-value, [3]Fisher's exact, HTH = Ho Teaching Hospital, VRH = Volta Regional Hospital

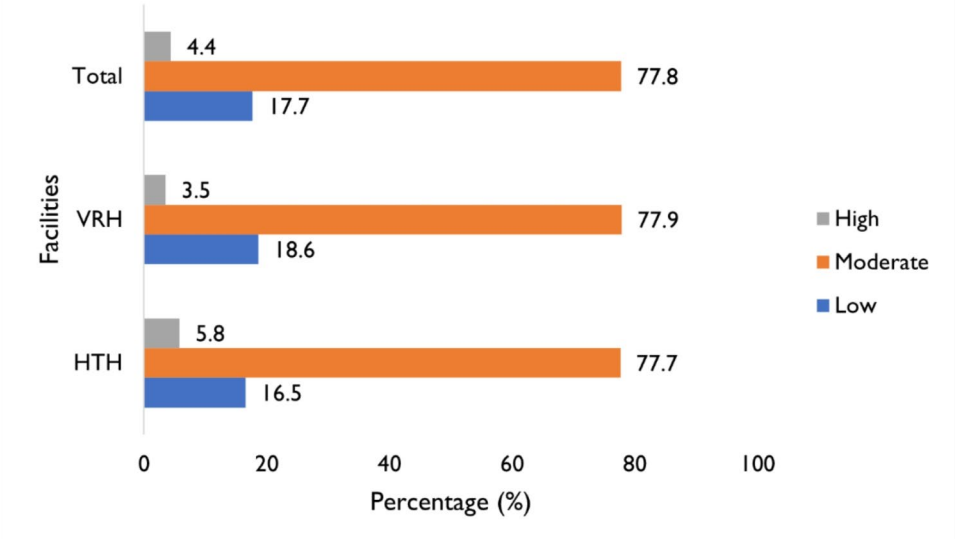

Fig. 1 Prevalence of occupational stress among nurses at two facilities

Table 2 Prevalence of occupational stress by socio-demographics of respondents

		Low (*n* = 44)	Moderate (*n* = 193)	High (*n* = 11)	*P*-value
		n (%)	*n* (%)	*n* (%)	
Age group					0.315[1]
	19–29	22 (15.5)	180 (79.6)	11 (4.9)	
	30–39	22 (22.2)	71 (71.7)	6 (6.1)	
	40–50	0	8 (100)	0	
Sex					0.810[1]
	Male	17 (19.5)	67 (77.0)	3 (3.5)	
	Female	27 (16.7)	126 (78.3)	8 (5.0)	
Religion					0.022[1]
	Christian	35 (15.5)	180 (79.6)	11 (4.9)	
	Islam	9 (40.9)	13 (59.1)	0	
Ethnicity					0.142[1]
	Akan	21 (25.6)	60 (73.2)	1 (1.2)	
	Ewe	20 (14.7)	108 (79.4)	8 (5.9)	
	Ga/Dangme	2 (10.5)	15 (79.0)	2 (10.5)	
	Others	1 (9.1)	10 (10.9)	0	
Marital Status					0.959[2]
	Single	25 (18.4)	105 (77.2)	6 (4.4)	
	Married	19 (17.0)	88 (78.6)	5 (4.5)	
Years of Experience					0.979[1]
	Less than 5	25 (17.3)	113 (78.5)	6 (4.2)	
	5–10	16 (19.7)	61 (75.3)	4 (4.9)	
	11–15	3 (15.8)	15 (78.9)	1 (5.3)	
	Above 15	0	4 (100)	0	

[1]Fisher's exact., [2]Chi-Square P-value.

of a nurse was found associated with the level of occupational stress experienced ($P=0.022$).

Common causes of occupational stressors among nurses based on WOSS

Findings indicated that nurses working in hospitals from both locations face significant occupational stress, with long work hours, Exposure to infectious diseases, inadequate staffing levels, handling many patients alone, and lack of break periods being some of the most prevalent stressors. The total individual average score for the nurses from the two areas (HTH = 3.02 and VRH = 3.09) was 25% higher than the established WOSS individual average of 2.25. (Table 3).

Physical, emotional, and psychological effects of occupational stress among nurses

Participants reported various effects of occupational stress. Some of which include physical effects, emotional and psychological. Headache was reported by 73.8% of the nurses in VRH and by 97.9% of the nurses in HTH. Regarding emotional effects, nurses in VRH experienced being easily angered (47.6%), frustrated (50.5%), overreaction (29.1%), and forgetfulness (35.9%). In Ho Hospital, the percentages were slightly higher, with 57.2% reporting being easily angered, 68.3% experiencing frustration, 44.1% overreacting, and 70.3% suffering from forgetfulness. In VRH, 81.6% reported a lack of concentration. In Ho, similar trends were observed, with 80.0% reporting a lack of concentration (Table 4).

Occupational stress coping mechanisms

In managing stress, nurses in both VRH and HTH employed various strategies. The most common stress management strategies among nurses in VRH included participating in hobbies (71.7%), avoiding unnecessary stress sources (85.5%), better time management (78.6%), standards and attitude adjustments (88.3%) and expressing their feelings (81.4%) as coping mechanisms. Similarly, in HTH, nurses mostly engaged in avoid unnecessary stress sources (92.2%), and manage their time better (82.4%), standards and attitude adjustments (98.0%) and expressing their feelings (75.3%) to cope with stress. Seeking support (59.8%) and using sleep as a strategy (49.5%) are also common (Fig. 2).

Causes of occupational stress experienced in the course of work among respondents

The t-test analysis was conducted to examine the significant stressors of occupational stress among nurses at HTH and VRH. Nursing difficult patients (t=-1.1196, $p=0.037$), Unfriendly relationship with superiors, colleagues, and subordinates (t=-2.3333, $p=0.020$), working with incompetent staff (t=-1.3129, $p=0.037$) were

Table 3 Most common causes of occupational stress experienced by respondents

Rank Order	VRH nurses ($n=145$)		HTH nurses ($n=103$)	
	Stressors	**Individual average score**	**Stressors**	**Individual average score**
1st	Long work hours	3.52	Lack of break period during a shift	3.43
2nd	Exposure to infectious diseases	3.5	Inadequate staffing levels	3.33
3rd	Inadequate staffing levels	3.47	Handling many patients alone	3.33
4th	Handling many patients alone	3.46	Lack of opportunity for growth/promotion	3.26
5th	Needle-stick injuries	3.29	Long work hours	3.21
6th	Lack of break period during a shift	3.26	Exposure to infectious diseases	3.21
7th	Lack of opportunity for growth/promotion	3.12	Inadequate delegation of responsibilities	3.07
8th	Inadequate delegation of responsibilities	3.05	Working with incompetent staff	3.05
9th	Job insecurity	2.99	Unfriendly relationship with superiors, colleagues and subordinates	2.99
10th	Harassment from aggressive relatives	2.94	Nursing difficult patients	2.9
11th	Working with incompetent staff	2.86	Job insecurity	2.86
12th	Frequent night duty	2.84	Nursing patients without relatives	2.85
13th	Nursing difficult patients	2.76	Needle-stick injuries	2.81
14th	Nursing patients without relatives	2.71	Harassment from aggressive relatives	2.65
15th	Unfriendly relationship with superiors, colleagues and subordinates	2.6	Frequent night duty	2.34
	Total average	3.09		3.02
	WOSS baseline	2.25		2.25

Table 4 Physical, emotional and psychological effects of Occupational stress among nurses in HTH and VRH.

Effects	VRH ($n=103$)	HTH ($n=145$)
	Yes (%)	**Yes (%)**
Physical effects		
Headache	76 (73.8)	142 (97.9)
Anxiety	33 (32.0)	91 (62.8)
Fatigue	71 (68.9)	121 (83.5)
Muscle ache	43 (41.8)	110 (75.9)
Loss or gained weight	35 (34.0)	76 (52.4)
Insomnia	48 (46.6)	86 (59.3)
High blood Pressure	5 (4.9)	40 (27.6)
Diabetes	3 (2.9)	14 (9.7)
Emotional effects		
Easily angered	49 (47.6)	83 (57.2)
Frustration	52 (50.5)	99 (68.3)
Over-reaction	30 (29.1)	64 (44.1)
Forgetfulness	37 (35.9)	102 (70.3)
Psychological effects		
Lack of concentration	84 (81.6)	116 (80.0)
Memory Loss	15 (14.6)	35 (24.1)
Attempt to withdraw from work	32 (31.1)	44 (30.3)
Substance abuse	1 (1.0)	29 (20)
Severe depression	14 (13.6)	37 (25.5)

the statistically significant stressors among the HTH nurses compared with the VRH nurses. However, long work hours (t=2.0841, $p=0.038$) and needle-stick injuries (t=2.6669, $p=0.008$) were the statistically significant stressors among the VRH nurses (Table 5).

Discussion

Addressing occupational stress among nurses is vital to maintain a stable mental state, ensuring the effective delivery of healthcare services and preventing burnout and attrition from the nursing profession, however, a major gap in the empirical literature is the lack of comparative research on the prevalence and causes of work-related stress among nurse in different health facilities with variations in healthcare demand and referral patterns due to geographical and administrative distinctions in Ghana. This gap justifies the need to understand the prevalence and unique stressors to occupational stress among nurses in different health facilities, as it has significant implications for the well-being of nurses and the quality of patient care. Without a comprehensive understanding of the unique stressors faced by nurses in this area, targeted interventions, and policies to alleviate stress and promote well-being cannot be effectively developed. Our study may inform policymakers and healthcare planners, leading to improved interventions and resource allocation for a healthier nursing workforce, ultimately aligning with the broader objective of achieving SDG target 3.4, which focuses on promoting mental health and well-being for all.

Our study showed that all nurses experienced stress with a high number of nurses experiencing a moderate perceived stress level. Numerous studies conducted in various healthcare settings have consistently identified stress as a prevalent issue in the nursing profession

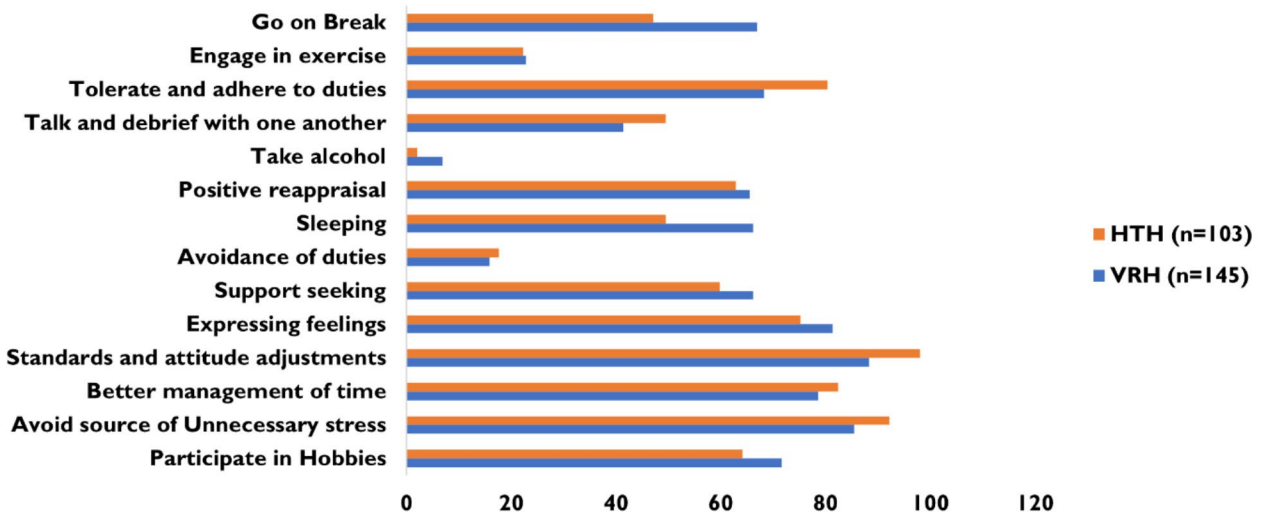

Fig. 2 Coping strategies employed by nurses at the two facilities

Table 5 Difference in causes of occupational stress among nurses at the HTH and VRH

Causes of stress	VRH (*n* = 145)	HTH (*n* = 103)	Total (*N* = 248)	t	*p*-value
	Mean	Mean	Mean		
Nursing difficult patients	2.76	2.90	2.82	-1.1196	*0.037**
Inadequate staffing levels	3.47	3.33	3.41	1.0721	*0.285*
Harassment from aggressive relatives	2.94	2.65	2.82	1.9535	*0.052*
Nursing patients without relatives	2.71	2.85	2.77	-0.9268	*0.055*
Working with incompetent staff	2.86	3.05	2.93	-1.3129	*0.037**
Frequent night duty	2.84	2.34	2.64	2.7905	*0.006***
Lack of break period during shift	3.26	3.43	3.33	-1.1142	*0.266*
Handling many patients alone	3.46	3.33	3.41	0.8546	*0.394*
Inadequate delegation of responsibilities	3.05	3.07	3.06	-0.1568	*0.876*
Job insecurity	2.99	2.86	2.93	0.7522	*0.453*
Lack of opportunity for growth/promotion	3.12	3.26	3.18	-0.8803	*0.380*
Unfriendly relationship with superior, colleagues and subordinates	2.60	2.99	2.76	-2.3333	*0.020**
Long work hours	3.52	3.21	3.40	2.0841	*0.038**
Exposure to infectious diseases	3.50	3.21	3.38	1.8505	*0.065*
Needle-stick injuries	3.29	2.81	3.09	2.6669	*0.008***

[13–15, 29]. Osei-Mireku et al. (2020) in their study to find out the level of stress among nurses at the Tamale Teaching Hospital (TTH) and whether individual differences affect the stress levels of nurses revealed high-stress level among the nurses at the TTH in Ghana [15]. Similarly, also Adzakpah et al. (2017) reported in their study to determine the current level of occupational stress experienced by nurses at the St. Dominic Hospital, Akwatia, Ghana that nurses experience above-average levels of occupational stress [13]. Similarities are not a coincidence as nursing is a highly demanding profession with the responsibility for critical care and patient safety, alongside the fast-paced and unpredictable hospital environment, adding to feelings of helplessness. Several factors may contribute to the observed stress levels, including the global Covid-19 pandemic. The pandemic has necessitated long work hours dedicated to it management and other healthcare services, potentially exacerbating stress among healthcare professionals. Additionally, issues such as staffing shortages, irregular shift work, emotional connections with patients, organizational culture, and perceived lack of career advancement and recognition are known stressors in nursing. These factors are commonly cited in the literature and likely contribute to the stress experienced by nurses. The impact of stress on nurses is significant, affecting their well-being, and job satisfaction, and potentially compromising their ability to deliver quality patient care. Stressed nurses may also be at higher risk of errors, which could impact patient safety. Moreover, high-stress levels might contribute to job

dissatisfaction and turnover, potentially leading to shortages in the nursing workforce and impacting healthcare service quality.

The study found that nurses in different hospitals experienced different stressors, including long work hours, exposure to infectious diseases, inadequate staffing levels, handling many patients alone, needle-stick injuries, lack of break periods, lack of growth opportunities, and long work hours. Previous studies found similar results [13, 30, 31]. Research by Adzakpa et al. (2017) among nurses in Akwatia revealed that; insufficient staff, managing many patients alone, absence of breaks, and nursing tough patients were the major causes of occupational stress amongst nurses [13]. The specific stressors encountered by nurses can vary based on geographical locations and the types of cases and patient demographics they encounter. In the VRH, with limited healthcare resources and a single major referral facility [22], nurses face a broader range of cases, for instance, The global COVID-19 pandemic has likely intensified these stressors, adding pressure on nurses in these settings. This puts pressure on the hospital's nurses, which will likely expose them to these occupational stressors. In Ho, multiple referral facilities [22] provide more opportunities for growth and career advancement, alleviating stress related to lack of promotion. Understanding these geographical and resource-related differences is crucial for developing targeted interventions to address occupational stress and improve the well-being of nurses in both settings. Nurses in the VRH may focus on managing specific stressors in their setting. Tailoring interventions and support systems to the unique needs of nurses in different regions may contribute to a healthier nursing workforce and reduce burnout, ultimately improving patient care quality and societal health outcomes.

A more resilient and supported nursing workforce is essential for a sustainable and effective health service delivery [32–34]. By identifying effective coping mechanisms and support systems, nurses can better manage their stress and enhance their overall well-being as it may empower nurses to proactively address the stressors they face and adopt healthier coping strategies to prevent burnout and improve job satisfaction. Also, it may guide in providing resources and support to promote effective stress management among nurses and can contribute to a healthier nursing workforce, reduce turnover, as well as improve the quality of patient care. Findings revealed that nurses in both VRH and HTH employed diverse stress management strategies. In the VRH, nurses commonly utilize participating in hobbies, avoiding unnecessary stress sources, better time management, standards, and attitude adjustments, and expressing their feelings as coping mechanisms. Similarly, nurses in HTH frequently engaged in avoiding unnecessary stress sources, managing their time better, standards and attitude adjustments, and expressing their feelings. Seeking support is a prevalent strategy among nurses in both settings. Ofei et al. (2019) assessed stress and coping strategies among nurse managers and found time management, effective communication and delegation of duties were the major stress coping mechanisms used [35].

The nurses further revealed that nursing had emotional, psychological, and Physical effects on their health. These findings were consistent with a study conducted by Kaburi et al. (2016), which revealed that a greater population of nurses' psychological well-being was unfavourably affected by various work activities [21]. Similarly, according to Ampofo et al. (2020), occupational stress affects nurses in the emergency department physically, and mentally, family relationships, job fulfilment, and the quality of their nursing care [36]. Consistency was also found in another study conducted among nurses in Cameroon which showed that the highest effects of stress were the development of musculoskeletal conditions, headache, and loss of concentration. Frustration and intention to quit work are some mild effects of stress as discovered in the study [37]. This implies that occupational stress affects nurses' performance which may likely lead to poor performance. In 2020, Ampofo et al. conducted a study amongst health professionals in Wa municipal of Ghana and reported that stress affected health professionals' performance [36]. Moreover, the existence of occupational stress among Ghanaian nurses shows continued difficulties in safeguarding the well-being of nurses despite current laws about mental health and workplace safety. This circumstance implies that to lessen the negative effects of stress on nurses' health and satisfaction with their work, current policies must be effectively implemented and supported [38].

Limitation

This study was subjected to volunteer bias (Self-Selection) as some volunteers refused to participate in the HTH. This refusal of volunteers may be due to the lack of anonymity and confidentiality shown to respondents during the point of data collection, thus underestimating the true prevalence and severity of stress among nurses at the HTH This was also subjected to differential misclassification bias which may have potentially influenced the level of stress coming from the HTH due to underreporting. Also, due to the cross-sectional studies nature, of our studies, it limits our ability to capture the dynamic and temporal aspects of stress and its impacts. Consequently, we cannot determine causal relationships between stressors and their effects on nurses' health and well-being. Future research should consider longitudinal designs to better understand the temporal dynamics of occupational stress among nurses. This study's findings are specific to

the Volta region and may not fully represent the prevalence, causes, effects and coping strategies of nurses in other parts of the country. Future studies should include multiple regions to provide a more comprehensive understanding of the occupational stress experienced by nurses nationwide.

Conclusions

The study revealed that the majority of nurses reported moderate levels of stress, with stressors differing between the two hospitals studied. Key causes included dangers such as needle stick injuries, long working hours, dealing with challenging patients, and strained interpersonal relationships. Common side effects were headaches, exhaustion, irritability, and trouble focusing.

To mitigate these issues, we recommend that nurses be well-educated about the specific operational demands inherent in healthcare. With appropriate education and guidance, nurses can better understand these challenges as integral parts of their roles, viewing these operational demands not merely as stressors, but as meaningful and motivating aspects of their job.

Addressing occupational stress among nurses in Ghana is paramount for safeguarding their well-being and improving the quality of patient care. However, it is important to acknowledge that stressors and coping mechanisms may vary across different regions and healthcare facilities in Ghana. Therefore, policymakers and healthcare planners should prioritize targeted research to understand and mitigate the unique stressors faced by nurses in various health facilities across the country.

Conducting localized studies to identify specific stressors and developing tailored interventions such as stress management training and work-life balance initiatives are strongly recommended. Additionally, fostering supportive organizational cultures that prioritize mental health is crucial. Building nurses' capacity through ongoing training and professional development, and fostering collaborations among stakeholders to ensure a coordinated approach, will further support these efforts.

Monitoring and evaluating the effectiveness of interventions will enable continuous improvement and sustainable support for the nursing workforce. This approach will contribute to the broader objective of promoting mental health and achieving Sustainable Development Goal (SDG) 3.4 in the healthcare sector.

Supplementary Information

The online version contains material available at https://doi.org/10.1186/s12889-024-19757-3.

Supplementary Material 1

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Author contributions

VUG conceived and implemented the study. ANN, MKA, EO contributed to the study design and wrote the first draft of the manuscript. VUG, SKA and SS analysed and interpreted the data. GK, PK and EO and VUG revised the first and subsequent drafts. All authors read and approved the final manuscript.

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Data availability

The dataset used for this study is available from the corresponding author on request.

Declarations

Ethics approval and consent to participate

Ethical approval for this study was sought from the of the Ghana Institute of Management and Public Administration Ethical Review Committee (GIMPA-ERC) and the University of Health and Allied Sciences Review Ethics Committee (UHAS-REC) for both HTH and VRH respectively. The protocol identification number GIMPA-REC A. [013] 21–22 and UHAS-REC A.9[75] 20–21. Furthermore, informed consent was acquired from each study participant before the commencement of work, with a guarantee of confidentiality and anonymity of the data, by ethical norms for medical research involving human subjects. The principal investigator enrolled 248 subjects and invited them to participate willingly with the option to withdraw at any time. Our research was carried out in conformity with the Helsinki Declaration's ethical criteria [28].

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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