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Predictors of stress and associated factors among healthcare workers in Western Ghana

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ABSTRACT

Healthcare professionals are the most vulnerable to stress among all occupational groups due to the nature of their work environment. The aim of this study is to determine the level of stress and associated factors among healthcare workers in Western Ghana. The study employed a cross-sectional design with self-administered questionnaires. The results show that 69.5% of the respondents were stressed. Prevalence of stress was higher among female respondents than males. We found that 40.4 % of respondents intend to change work as a result of stress faced at their work places. Respondents aged 56≥ were more (3.16) likely to be stressed than those in the other age groups. We found a significant association between age, marital status, workload and educational background and stress levels among the respondents. The management of these healthcare institutions and their stakeholders must adopt strategies to help health workers cope with the stress they encounter.

1. Introduction

It is well known that African countries suffer diseases, but in recent times, there is an increasing trend in the loss of life attributed to non-infectious or non-communicable diseases [NCD](e.g., stress, malnutrition and obesity). The World Health Statistics report in 2019, shows that NCDs collectively caused 41 million deaths worldwide in 2016, equivalent to 71% of all global deaths (WHO, 2019). Stress at the workplace have gained much attention recently and have been recognized as a global disease due to its negative impact on the physical, emotional, and psychological wellbeing of people in various occupational groups (Godifay et al., 2018; Ahmad et al., 2015). It is not surprising therefore that Ofei et al. (2020) portray stress as an epidemic, while the World Health Organization has declared stress as the global epidemic of the 21st century and Al-Makhaita et al. (2014) describe it simply as been pervasive and insidious part of everyday life in the work environment. Dagget et al. (2016), however, have observed that though occupational stress exists in every profession it is more pronounced in the health professions. The complex and dynamic nature of the world of work of the health sector exposes health care workers to high levels of work-related stress which seriously impacts on general wellbeing and organizational outcomes. Indeed, Hersch et al. (2016) describe nursing as a notoriously high-stress occupation, emotionally taxing and physically draining, with a high incidence of burnout.

Stress has been defined variously by many authors. For example, According to United States National Institute for Occupational Safety and Health, job stress is defined as "the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, responses, or needs of the worker. Work-related stress (WRS) is simply stress, which is caused or made worse by working. Job stress is a substantial and growing concern for workers, their advocates, employers, occupational health and safety regulators, and workers' compensation programs. Kyei et al. (2016) define stress as a feeling of strain and pressure and reflects disparity between comprehension of the requirements on one hand, and the ability to cope with this demand on the other. Molero et al. (2019) also define stress as a complex psychobiological process which is experienced when the individual perceives a threat or danger in the environment. Stress remains a major organizational challenge confronting many healthcare professionals due to its adverse effects on staff performance, job satisfaction, and patients' outcomes. Stress has become an endemic problem in healthcare contributing to health-related challenges which decrease efficiency and productivity. The current work environment of nurses is confronted with increasing healthcare complexities such as heavy workloads, inadequate staffing levels, scarce resources and expanding roles which significantly promote work-related stress (Jones et al., 2015). Almutairi et al. (2020) have argued that health care professionals especially those in pre-hospital care are exposed to emotional stress every day and therefore likely to be

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depressed. Kyei et al. (2016) report that stressed employees exhibit signs of depression or not being appreciated, nervousness and anxiety, loss of appetite, exhaustion, blood pressure and even lead to abnormal menstruation. The reduced psychological and physiological challenges in the health professionals affect their quality of life and consequently their productivity and overall quality of health service delivery and outcomes (Afulani et al., 2021). Stress is also related to all types of ulcers and more importantly, it impairs response to treatment due to the fact that it acts by stimulating the production of gastric acid or by promoting behavior that causes risk to health (Sadiq et al., 2020). Accordingly, the identification of the predictors of stress at work becomes critical in the management and prevention of sociological and psychological disorders (Suleiman-Martos et al., 2020; Pisljar et al., 2011), which gives credence to this study.

Generally, stress can also be said to be a psychological and physiological response to undesirable experiences generally termed as stressors (Al-Makhaita et al., 2014). Though "stress" is more commonly thought of as harmful (Epel et al., 2018), how it is responded to could be more detrimental or otherwise. The management of stress could lead to "eustress" (positive responses such as innovation and improved productivity) or "distress" (negative outcomes) (Kaburi et al., 2016). Rudland et al. (2020), for instance, report that thinking more positively about stress, could lead to productive learning in health education and improve performance. Accordingly, it has been argued that focusing only on distress may be limiting as it curtails recognition of the positive benefits of stress in health professional education (Pollock et al., 2020). Globally, the prevalence of stress varies between 9.2% and 68.0% (Kaburi et al., 2019). In Ghana, occupational stress and its sources among healthcare workers is largely under-explored by researchers. This gap motivates the study. The purpose of this study is to assess the psychological working conditions, and to identify the important predictors of occupational stress among health care workers in the Western region of Ghana. To get a comprehensive understanding of the predictors of stress, we also account for not only the demographic factors of the employees but also the work environment and organizational factors. This research is relevant because in addition to the damaging effects of stress on health and well-being (O'Connor et al., 2021), stress is also a major contributor to attrition and widespread shortages in the health profession (Hersch et al., 2016). Many studies do show that health professionals show higher levels of psychosocial stress than other population samples and nurses and doctors in particular have been recognized as susceptible to burnout mainly due to work overload (Rössler, 2012; Ribeiro et al., 2018; Shepherd and Newell, 2020). Reasons for stress included long working hours, heavy workload, low wages and high job risk (Garcia-Rodriguez et al., 2014; Munnangi et al., 2018; Yehya et al., 2020; Molero et al., 2019).

The Ghana Health Service (2018) shows that in 2017 there were 1003 clinics, 404 hospitals, 855 health centres, and three (3) psychiatric hospitals manned by 4016 Doctors, 718 Pharmacists, 21, 225 Enrolled Nurses, 15, 456 Community Nurses, 9884 Midwives, and 21, 927 professional nurses (Ghana Health Service, 2018). Though health infrastructure is inadequate, it is worthy of mention that there has been improvement in the past few years. For example, in 2013, there were 2730 doctors but increased to 4016 in 2017. The doctor to population ratio was 1: 9749 in 2013 but improved to 1: 7374 in 2017. The nurse to population ratio national average was 505 in 2017, with highest figure for the Western region (focus of study) at 597. The region is also peculiar as it has 10 out of the 11 Mine Hospitals in the country. The Mining industry of Ghana accounts for 5% of the country's GDP and minerals make up 37% of total exports, of which gold contributes over 90% of the total mineral exports. Also, Ghana's outpatient attendance per capita is about 0.97 with the Western region having 1.2, which is exceeded only by the Brong Ahafo Region at 1.4 and the Upper East at 1.5 (Ghana Health Service, 2018). Thus, this Western Regional study could provide lessons for both endowed and less endowed regions of Ghana in understanding stressors for healthcare workers.

Currently, the Government of Ghana (GOG) spends just under 7% of general government expenditure on health as a percentage of total government expenditure based on 2014 values, which is equivalent to approximately USD100 per capita annually. This is far below the African average of 11.4% and the global average of 14.1%. Though the total expenditure on health as a percentage of gross domestic products (2015) is higher (6%) than the African average of (5.6%) but below the global average of 8.6% (World Health Statistics, 2017; UK Home Office Country Report, 2019). Overall, the report notes that Ghana has made significant strides in strengthening International Health Regulations (IHR) capacity and reducing mortality due to noncommunicable diseases, suicide, harmful use of alcohol, and tobacco use, respectively. The progress is attributed to collaborations with the agricultural, financial, transportation, customs and immigration, and housing sectors, among others.

Additionally, the level of skilled health professionals in Ghana is ranked 14 out 47 ranked countries over the period 2005–2015 and it is ranked 8th on the IHR and health emergency preparations but does poorly on the health expenditure as a percentage of government expenditure of just 6.8% which is ranked 41 out of 47 nations. This has been made worse by the emigration trend, the recruitment of health workers, particularly physicians, remains a challenge and has created daunting shortages in the health sector. As health workers age and recruitment remains stagnant, these shortages have hindered the operational capacity of many lower-level facilities, including the Community-based Health Planning and Services (CHPS) (Asemota, 2020). Accordingly, identifying the key stressors of the health professionals is in the direction as it will prioritize the strategies that will optimize the mitigation and adaptation strategies to be employed in the midst of resource constraints. In the sections that follow, the methodology employed to achieve the research objectives is described after which the results are presented and then the conclusion and policy implications are given.

2. Materials and methods

2.1. Study site description

2.1.1. Demographics of the study area

The Western Region covers an area of 23,921 sq. km, and had a population of 2,376,021 at the 2010 Census; the latest official projected population (as at 2019) is 3,093,201. The Western Region enjoys a long coastline that stretches from Ghana's southern border with Ivory Coast to the Western region's boundary with the Central Region on the east. The region's doctor and nurse population ratio are one doctor to 10,452 and one nurse to 1,251.

2.1.2. Research design and sample size

The study employed a descriptive, cross-sectional design with self-administered questionnaires to assess workplace stress among health care workers in the western region of Ghana. The study was, conducted from September 1 2019 to 2019 to February 28, 2020. The sample size was determined using Miller and Brower's mathematical formula for estimating single proportions (Miller and Brower, 2003). The standard normal deviation was set at a 95 % confidence level, prevalent with the allowable margin of error of 0.08. The formula $n = N/1 + N(\alpha)^2$ was used to determine a sample size for each hospital. The minimum sample size increased and rounded up when 10 % of the calculated, minimum sample size was added for nonresponse, inappropriately filled or missing questionnaires since the questionnaires were interviewer administered. In the formulae: n = Sample Size, N = Total Population, and α = Margin of Error, adopted from Miller and Brewer (2003). Thus, a total of 420 questionnaires were distributed for the study. However, 400 were completely filed and returned, which represents a 95% response rate. Questionnaires were self-administered and took an average of 28 min to complete. The respondents comprised of health care workers in the hospitals included: Physicians, Nurses/midwives, Pharmacists, Laboratory scientists, and Radiographers.

2.1.3. Sampling technique

Data were obtained from a regionally representative survey of among health care workers (N = 400). The region was demarcated into 3 zones: south-western belt, middle belt and north-western belt. The study utilized a stratified sampling technique to obtain the required number of respondents from hospitals within the three (3) demarcated zones.

Sampling proportionate to size was used to determine the number of respondents to be interviewed from each of the demarcated zones.

2.1.3.1. Data collection instrument. A standardized questionnaire was used to obtain data. Field inspection of questionnaire data was carried out days after the interviews were conducted, and errors were immediately verified and corrected. The stress causes-related aspect of the questionnaire was adopted form Cohen et al. (1983). It contains 39 statements to be answered on a five-point Likert scale (Willems, 2014). Furthermore, the questionnaire also captured demographic data of the respondents. It took approximately 25–35 min to complete the questionnaire. Six experts in social sciences measurement and evaluation determined face validity of the instrument. The average overall face validity was equal to 95%. The study used Cronbach's alpha test formula to test the reliability of the standard questionnaire. The test yielded a reliability coefficient of 0.8. The Cronbach's alpha test assess the internal consistency of a set of scale of or items to ensure that they are all consistent in measuring the same attributes under study (Odonkor and Frimpong, 2019).

2.1.3.2. Ethical considerations. The protocol for the study was ethical and was cleared by Ethics Review Committee of the Ghana Institute of Management and Public Administration. Prior to data collection respondents' written and verbal consent were sought. Respondents were informed about the purpose of the study and were made to understand that participation was voluntary and refusal to participate in the study would not affect their employment status. The study respondents were assured of confidentiality and informed that they could withdraw from the study at any time and were at liberty not to answer any question they did not want to. All respondents were advised that completing the survey implied informed consent to use the data for research purposes. In addition, all personal identifiers were removed in the summary data to ensure confidentiality.

2.1.3.3. Data handling and analysis. The data were entered into a Spreadsheet and later exported to SPSS version 23 and coded for analysis. The analysis included both descriptive and inferential statistics. Descriptive statistics (frequencies, means, and standard deviations) were used to describe the variables of interest. Univariate analysis was used in obtaining the frequency of socio - demographic characteristics and other discrete variables of the study population. Data were analyzed by contingency table except for t-tests as appropriate for continuous data (for example, age). The Chi Squared (X^2) tests were used to assess the bivariate relationships between these factors as well as for difference in proportions and for other categorical variables. All statistical tests were two-tailed and alpha = 0.05 or less were considered to be statistically significant. We employed stratification and standardization techniques to control for confounding variables.

3. Results

Table 1 shows the demographic characteristics of the respondents. Majority of the respondents (272) representing 68.0% were females while the remaining 128 representing 32.0% were males. Most respondents, 230 (57.5%) were within 25–35 years. Majority of the respondents (41.3%) were Bachelor's degree holders. Most of the respondents (50.3%) work 40hrs per week while relatively few of them (19.3%) work over 50hrs per week.

Table 1. Demographic characteristics of the respondents.

Variable (N = 400)	Frequency	Percentage
Sex		
Male	128	32.0
Female	272	68.0
Age group		
25–35 years	230	57.5
36–45 years	105	26.3
46–55 years	45	11.3
above 56 years	20	5.0
Educational level		
Less than Diploma	106	26.5
Diploma	100	25.0
Bachelor's degree	165	41.3
Master's degree or higher	28	7.0
Social Status		
Upper Class	96	24.0
Middle Class	285	71.3
Lower Class	19	4.8
Marital status		
Married	213	53.3
Single	158	39.5
Divorced	30	7.5
Residence		
Rural	333	83.3
Urban	67	16.8
Working Unit		
Out-patient	103	25.8
In-patient	297	74.3
Job role		
Physician	77	19.3
Nurse/midwife	258	64.5
Pharmacist	21	5.3
Laboratory scientist	37	9.3
Radiographer	8	2.0
Work Experience		
5 year or less	80	20.0
5–10 year	272	68.0
Over 15 years	48	12.0
Workload		
40 h/week	201	50.3
41–50 h/week	122	30.5
More than 50 h/week	77	19.3

Table 2 shows the demographic characteristics and stress level among the respondents. It can be observed that except for gender, there were significant differences among respondents in terms of the demographic characteristics and their stress levels. Among the age groups, those aged 46 or more had the highest percentage of respondents (over 83%) indicating that they do not encounter stress whilst the relatively more youthful 34–45 age group had the highest percentage of respondents (35.7%) indicating they do encounter stress.

Table 3 shows the work characteristics of the respondents. All the hospital workers (100%) indicated that they always receive compensation for working extra hours. It is worth noting that a large percentage of respondents (75%) revealed that they do not get any support at all from their workplace for stress relief. Most respondents (87.5%) indicated they never resolve conflict on time.

Table 2. Demographic characteristics and stress level among the respondents.

Variable	Stress						Significance Level
	Yes		No		Total		
	Number	%	Number	%	Number	%	
Sex							
Male	87	68.2	41	31.8	128	32	$X^2 = 0.435$
Female	191	70.1	81	29.9	272	68	P = 0.0432
Total	278	138.3	122	61.7	400	100	df = 1
Age group							
25–35 years	195	73.4	70	26.6	265	66.3	$X^2 = 22.127$
36–45 years	68	64.3	37	35.7	105	26.1	P = 0.001
46–55 years	13	83.5	2	16.5	15	3.8	df = 3
above 56 years	13	85.7	2	14.3	15	3.8	
Total	287	306.9	113	93.1	400	100	
Educational level							
Less than Diploma	93	88.2	13	11.8	106	26.5	$X^2 = 34.341$
Diploma	81	81.2	19	18.8	100	25.2	P = 0.001
Bachelor's degree	111	67.3	54	32.7	165	41.3	df = 3
Master's degree or higher	12	43.2	16	56.8	28	7	
Total	298	279.9	101	120.1	399	100	
Social Status							
Upper Class	36	37.3	60	62.7	96	24	$X^2 = 73.323$
Middle Class	194	67.9	91	32.1	285	71.2	P = 0.001
Lower Class	17	87.3	2	12.7	19	4.8	df = 2
Total	246	192.5	154	107.5	400	100	
Marital status							
Married	169	79.8	43	20.2	212	53	$X^2 = 29.861$
Single	109	68.3	50	31.7	159	39.7	P = 0.001
Divorced	24	83.2	5	16.8	29	7.3	df = 2
Residence	302	231.3	98	68.7	400	100	
Rural	290	87.2	43	12.8	333	83.3	$X^2 = 13.326$
Urban	44	65.4	23	34.6	67	16.7	P = 0.001
Total	334	152.6	66	47.4	400	100	df = 1
Working Unit							
Out-patient	87	84.2	16	15.8	103	25.7	$X^2 = 17.345$
In-patient	209	70.3	88	29.7	297	74.3	P = 0.001
Total	296	154.5	104	45.5	400	100	df = 1
Job role							
Physician	42	54.4	35	45.6	77	19.3	$X^2 = 23.432$
Nurse/midwife	189	73.4	69	26.6	258	64.1	P = 0.001
Pharmacist	14	68.3	7	31.7	21	5.3	df = 4
Laboratory scientist	21	57.3	16	42.7	37	9.3	
Radiographer	4	51.4	4	48.6	8	2	
Total	271	304.8	130	195.2	401	100	
Work Experience							
5 year or less	56	69.6	24	30.4	80	20	$X^2 = 36.783$
5–10 year	221	81.2	51	18.8	272	68	P = 0.001
Over 15 years	35	73.3	13	26.7	48	12	df = 2
Total	312	224.1	88	75.9	400	100	
Workload							
40 h/week	115	57.2	86	42.8	201	50.3	$X^2 = 33.283$
41–50 h/week	71	58.3	51	41.7	122	30.4	P = 0.001
More than 50 h/week	60	77.3	17	22.7	77	19.3	df = 2
Total	246	192.8	154	107.2	400	100	

Table 4 shows the causes of stress among respondents' level among the respondents. It can generally be observed that with the exception of 'working with opposite sex' and 'supervising the work of others', more than half of the respondents agreed/strongly agreed to the causes of stress.

Table 5 shows reasons why respondents miss work. About 40% of the respondents reported that the most common reason why they missed work was physical illness, while work related injury was the least (3.7%). However, 16.6% said they miss work as a result of public holidays and 12% of the respondents reported that they miss work because they were unable to get needed day off.

Figure 1 shows the respondents intended actions to stress they faced at their work place. The results show that 40.4 % intend to change their

Table 3. Work characteristics.

Variable	All the time	Sometimes	Not at all
	n(%)	n(%)	n(%)
Do you work on weekends?	100(25.0)	250(62.5)	50(12.5)
Do you work on night/weekend calls during daily work?	75(18.8)	300(75.0)	25(6.3)
Do you get free time compensation?	400(100)	0(0)	0(0)
Do you resolve conflict on time?	20(5.0)	30(7.5)	350(87.5)
Do your workforce offer support for stress relief?	20(5.0)	80(20.0)	300(75.0)
Do you work on night shift?	100(25.0)	275(68.8)	25(6.3)

Table 4. Causes of stress among respondents.

Variable	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
	n(%)	n(%)	n(%)	n(%)	n(%)
Job requirement is more than my ability	120(30.0)	205(51.3)	50(12.5)	20(5.0)	5(1.3)
Work shift is changing frequently	100(25.0)	250(62.5)	0(0.0)	30(7.5)	20(5.0)
Working with the opposite sex	20(5.0)	30(7.5)	50(12.5)	200(50.0)	100(25)
Feeling isolated	150(37.5)	115(28.8)	30(7.5)	70(17.5)	35(8.8)
Hospital objectives do not match mine	170(42.5)	80(20.0)	25(6.3)	70(17.5)	55(13.8)
Lack of stability at home	80(20.0)	230(57.5)	30(7.5)	45(11.3)	15(3.8)
Permanent ringing of telephone	115(28.8)	250(63.5)	15(3.8)	12(3.0)	8(2.0)
Underpayment	50(12.5)	150(37.5)	90(22.5)	70(17.5)	40(10.0)
Supervising the work of others	80(20.0)	95(23.8)	50(12.5)	100(25.0)	75(18.8)
Unclear promotion requirement	150(37.5)	225(56.3)	0(0.0)	15(3.8)	10(2.5)
No participation in department decision making	100(25.0)	170(42.5)	30(7.5)	65(16.3)	35(8.3)
Time pressure	135(33.8)	210(52.5)	10(2.5)	30(7.5)	15(3.8)

place of work, while 28.6% consider changing jobs altogether. However, 18.2 % intend to quit their health practice, whiles 12.8% consider working on part-time basis only.

Table 6 shows the relationship between stress and the following selected socio-demographic characteristics: sex, age group, educational level, social status, work experience, marital status, and residence. Significant difference ($p < 0.05$) existed between workplace stress and marital status; age group and work stress; residence and social status; age group and marital status; and social status and residence.

The multiple logistic regression results (Table 7) show that respondents who are 56 or older were more likely to be stressed (3.16) than those in the other age groups. Respondents working 41–50 h/week were 2.36 times more likely to be stressed. In-terms of educational level, the results indicate that stress is likely to decrease with increasing level of education, and that respondents with a diploma are 3.73 times more likely to be stressed compared to those with higher education qualification.

4. Discussion

In the study, overall stress prevalence among the respondents was 30.5% which is in line with similar studies by Mosadeghrad (2013) for Iran (34.9%) and Salilih and Abajobir (2014) for Ethiopia (37.8%). However, the current finding is lower than previous studies conducted in Ethiopia (68.2%) by Birhanu et al. (2018), India (73.5%) by Kane (2009), Saudi Arabia (66.2%) by Salam (2016), Nigeria (92.8%) by Etim et al. 2(015) and Botswana (74%) by Maphangela (2015). On the other hand, stress prevalence is higher in the current study than studies carried out in Jordan (27%) by Boran et al. (2012), Malaysia (25%) by Rosnawati and Robat (2008), Taiwan (17%) by Aoki et al. (2011) and Vietnam by 20.7% Minh (2014). The reasons for these differences might be due to variation in tools used in the present study, the low level of stress prevalence is possibly due to the study setting, tools used, and target population but may not necessarily be as a result of sample size, because the number of respondents were relatively larger than those in studies which reported high levels of stress prevalence (Birhanu et al., 2018; Etim et al., 2015; Kane 2009).

The results of the study do not show significant difference in the stress levels of men and women. This is consistent with many other studies (Faraji et al., 2019; Birhanu et al., 2018; Dagget et al., 2016; Godwin et al., 2016; Al-Omar, 2003). However, Pawlina & Schnorr (2018) and Ogińska-Bulik (2006) do report that female health professionals are more likely to suffer stress as compared to males. On the other hand, Nirmala and Babu (2015) report that male healthcare workers felt higher levels of stress as compared to their female colleagues. These differences could be attributed to the variations in tools, settings and the male to female ratio of the health workers employed in the current study and the other studies.

Moreover, in this current study we found that respondnets who worked 40hrs per week - were more stressed (42.8%) than those who worked over 50hrs per week (22.7%). This is contrary to other studies by Salam (2016), Boran et al. (2012), and Birhanu et al. (2018) in Saudi Arabia, Jordan, and Ethiopia, respectively. There are several reasons that could possibly explain the variations in findings in the current study compared to other studies which include nature of work, number and duration of break intervals, and number of hours between shifts.

Table 5. Reasons for missing work.

Variable	Frequency	Percent (%)
Physical illness	139	39.7
Public holiday	58	16.6
Work related injury	13	3.7
Casual leave	70	20.0
Unable to get needed day off	42	12
Total	350	100

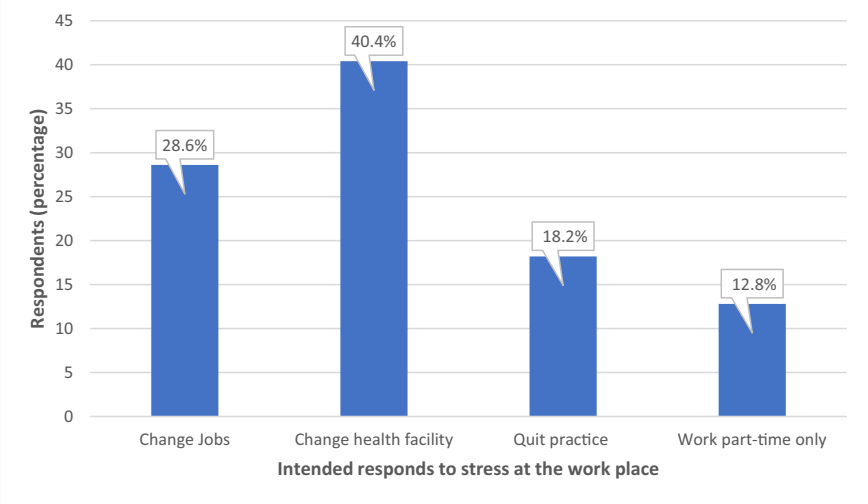

Figure 1. Respondents intended action to stress at their work place.

Table 6. Correlation between stress and selected socio-demographic variables.

Variable	WS	S	AG	EL	SS	WE	MS	R
Work-place Stress (WS)	1	0.582	0.322*	-0.874	0.687	0.873	0.223	0.439
Sex (S)	0.532**	1	0.147	-0.867	0.782	0.718	0.222	0.148
Age Group (AG)	0.322*	0.276	1	0.116	0.341	-0.174	0.044*	-0.588
Educational Level (EL)	-0.864	-0.782	0.112	1	-0.861	-0.819	-0.292	-0.335
Social Status (SS)	0.787	0.786	0.220	-0.841	1	0.716	0.358	0.033*
Work Experience (WE)	0.578	0.788	0.024*	-0.416	0.511	1	0.532	0.383
Marital Status (MS)	0.023*	0.261	0.158	-0.492	0.186	0.532	1	0.098
Residence (R)	0.539	-0.148	-0.588	-0.231	0.139	0.383	0.098	1

**. Correlation is significant at $P < 0.01$ level (2-tailed). *. Correlation is significant at $P < 0.05$ level.

One of the stressors identified in this study was the lack of clarity in promotion criteria. This finding is consistent with a similar study in Ghana, where lack of opportunity for promotion and inadequate resources were among the causes of stress (Godwin et al., 2016). Another, interesting finding of the study concerns respondents response to stress. Many respondents (40.4%) who reported stressed indicate that they usually change jobs. This possibly suggests the absence of proper stress management policies or lack of education of stress coping techniques and disinterest in the stress issues of the respondents by management in their respective health institutions. A Multiple Logistic Regression Model

Table 7. Multiple Logistic Regression Model for the association of socio-demographic characteristics and work place stress.

Variable	β	OR	OR 95%CI *	*P value*
Age group				
25–35 years(reference)		1	0.00–0.00	0.01
36–45 years	1.26	1.18	0.88–1.76	0.01
46–55 years	0.45	1.65	1.15–2.30	0.01
above 56 years	1.43	3.16	2.78–4.94	0.01
Marital status				
Single(reference)			0.00–0.00	
Married	1.36	1.23	0.80–1.46	0.01
Divorced	0.65	1.81	1.50–2.10	0.01
Workload(reference)				
40 h/week			0.00–0.00	
41–50 h/week	0.86	3.26	1.28–4.10	0.01
More than 50 h/week	0.79	2.23	1.08–4.63	0.01
Level of education				
Less than Diploma(reference)		1	0.00–0.00	
Diploma	0.77	3.73	0.53–2.16	0.01
Bachelor's degree	0.76	2.32	0.86–5.79	0.01
Master's degree or higher	1.33	1.23	0.80–1.46	0.01

* Significant at 0.05. OR = Odds ratio; 95% CI = 95% Confidence Interval; Ref = reference category.

(Table 7) was utilized to investigate associated factors of stress among the respondents, we found that age group, marital status, workload and educational background were associated with stress in the present study. This observation is similar to recent study in Ethiopia (Gebeyehu and Zeleke, 2019). Interestingly a study conducted by Tekeletsadik et al. (2017) identified job dissatisfaction as a risk factors for occupational stress.

In the present study, older healthcare professionals (over 56 years) were 3.16 times more likely to experience stress than those in the other age groups. Furthermore, respondents working 41–50 h/week were 3.26 times more likely to be stressed in terms of educational background, results indicate stress is likely to decrease with increasing level of education, and that respondents with a diploma are 3.73 times more likely to be stressed. Thus, the higher the educational qualification, the lower the stress level. This result agrees with a recent study by Alkatheri et al. (2019) but different from Salam (2016) and Sveinsdottir et al. (2006).

5. Conclusion

Stress prevalence among the healthcare professionals in the present study was high. Except for gender, there was significant difference between the other sociodemographic characteristics and stress levels among the respondents. The associated factors of stress were found to be age group, marital status, workload and educational background.

Based on the relationship between associated factors and stress levels as observed in this study, several vital points for policy are recommended.

First, management of healthcare institutions should put up structures which will strictly ensure employees carry out their respective roles and responsibilities in such way to reduce stress. This may be achieved by employing additional staff and cutting down the work load of staff. Second, counseling centers manned by qualified psychologists should be established with the various healthcare facilities, to help health workers cope with the stress they encounter as a result of their job demands.

5.1. Study limitations

This study is a cross-sectional study and hence, it measured information at a given point in time. Secondly, cross sectional studies represent only those who are surveyed and willing and can introduce volunteer bias. In addition, issues of temporality which is one of the main shortcomings of cross-sectional study may be present. In spite of this, cross sectional studies such as this are important because they provide a snapshot of the data which can be used for policy intervention.

Declarations

Author contribution statement

Stephen T. Odonkor: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Samuel Adams: Analyzed and interpreted the data; Wrote the paper.

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Data included in article/supplementary material/referenced in article.

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The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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