Prevalence and Determinants of Depression, Anxiety and Stress Among Psychiatric Nurses in Ghana: a Cross Sectional Study

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Abstract

Background: The job demands and stress associated with the nursing profession put nurses on an escalating risk to exhibit psychiatric morbidity such as anxiety and depression. This study assessed the prevalence and risk factors of depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana.

Methods: A cross-sectional design was used for this study. Proportionate and simple random sampling method were used to select 311 respondents for the study. Data was collected using a questionnaire which comprised Beck's Depression Inventory, Beck's Anxiety Inventory and Perceived Stress Scale. Data was analysed using descriptive statistics and a multinomial logistic regression.

Results: The results showed that 92% and 96.5% of mental health nurses experienced minimal depression and low anxiety respectively. In addition, 56.6% and 42.8% experienced low and moderate stress respectively. There was a positive association between educational level and depression whereas, a negative association existed between educational level and anxiety and stress. Also, mental health nurses who work at the OPD and Administration were more likely to experience anxiety and stress.

Conclusion: The findings of this study suggest that, higher level of educational opportunities for mental health nurses leads to decreases anxiety among nurses. Also, the work environment needs to be made conducive to promote the psychological wellbeing of nurses. Additionally, interventions on the management of depression, anxiety and stress by nurses in mental health hospitals need to be instituted, thereby, improving the health of nurses working in mental health hospitals.

Background

Nursing profession is demanding and expose nurses to work related stress, anxiety and depression [1]. Depression, anxiety and stress are among the commonly reported mental disorders and significantly contribute to the global burden of disease [2]. It is estimated that globally, 4.4% of the world's population suffer from depression and 3.6% from anxiety disorders [3].

Depression is a severe mental health disorder which symptoms include loss of interest in pleasurable activities, feelings of sadness, guilt, low self-esteem, sleep disturbance and difficulties in concentration [4]. Out of about 450 million people who suffer from mental health disorders globally, approximately 150 million of them suffer from depression [5]. Depression is linked to dissatisfaction with life among nurses working in various health care settings [6].

The way an individual's body respond to perceived threat is known as anxiety [7]. Symptoms of anxiety include increased blood pressure, respiration rate, pulse rate, tension, sweating and chest pain. Stress is a reaction that is started when an person perceives that external or internal demands exceed resources mobilized by the individual [8]. It is the feelings of an individual when he anticipates that his demands are

more than the resources available to him to fulfil those demands [9]. When an individual is not able to manage the negative impact of stress, they exhibit symptoms of anxiety and depression [10].

The high prevalence of anxiety, depression, stress and burnout at the workplace among nurses reflects the nature of the nursing profession [11–14]. The job demands and stress associated with the nursing profession put nurses on an escalating risk to exhibit psychiatric morbidity such as anxiety and depression that can affect all aspects of their personal, family and professional life [12, 14, 15].

In order to deliver quality and competent health care to patients who are admitted to hospitals, the mental health care needs of nurses is important and need to be supported to maintain optimal mental health care in order to render quality health care to clients [16]. Although mental health nurses are considered to be at higher risk of developing depression, anxiety and stress as compared to other categories of nurses [17], few studies investigated the mental health of psychiatric nurses especially in Ghana where resources are constraint. The aim of this study was to assess the prevalence and determinants of depression, anxiety and stress among psychiatric nurses in the psychiatric hospitals in Ghana. Specifically, this study sought to: determine the prevalence of depression, anxiety and stress among nurses; determine the prevalence of work place risk factors of depression, anxiety and stress among nurses; and identify socio-demographic characteristics that predict depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana.

Methods

Study Design and Study Area

This study employed a cross-sectional research design. It was conducted at the three public psychiatric hospitals in Ghana.

Population and Sampling Procedure

The population for this study included psychiatric nurses who work in the three public psychiatric hospitals in Ghana. A total of 993 nurses were recruited into the study. This comprises 462 nurses from Accra Psychiatric Hospital, 210 nurses from Ankaful Psychiatric Hospital and 321 nurses from the Pantang Hospital.

The sample size was determined by application of Miller and Brewer's formula [18]. It states that; at 95% confidence level; n= $\frac{N}{(1+N(a)2)}$. Where, n- desired sample size, N- target population, a- level of statistical significance of 0.05, 1-is a constant.

Therefore, the sample size, n= $\frac{993}{(1+993(0.05)2)}$ = 285.139=285

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The calculated sample size of 285 was increased by 10% to 314 in order to ensure that samples are not lost during data collection and data cleaning and also to increase the statistical power [19]. The sample size for each hospital was determined from the calculated sample size of 314 proportionate to the populations from each hospital. In all, 146 nurses were recruited from the Accra Psychiatric hospital, 102 from the Pantang hospital and 66 from the Ankaful psychiatric hospital.

Simple random sampling procedure was used to obtain the required number of participants from each hospital. The questionnaires were administered by the first author and trained research assistants to all 314 respondents who were involved in this study at a convenient place in the various hospitals. Those who wanted to self-administer were given a period of one week to complete the questionnaire after which the researcher went around the various hospitals and collected them.

Data Collection Instrument

Data was collected using a questionnaire. The instrument consisted of five sections; the first section focused on socio-demographic characteristics of respondents. The second section centred on prevalence of work place risk factors for depression, anxiety and stress. The third section focused on prevalence of depression. Beck's Depression Inventory (BDI) was used to assess depression. The BDI is a 21-item self-reporting scale on a 4-point scale: 0- (Never- do not apply to me), 1- (Sometimes- applied to me to some degree), 2- (Often- applied to me to a considerable degree), 3- (Almost always- applied to me very much). It has a minimum score of 0 and a maximum score of 63. The score of 0–13 indicate (minimal depression), 14–19 (mild depression), 20–28 (moderate depression) and 29–63 (severe depression) [20].

In the fourth section, anxiety was assessed using Beck's Anxiety Inventory (BAI). It is a 21-item self-report scale that is used to assess anxiety symptoms among adults on a 4-point Likert scale, which ranges from: 0- (Not at all), 1- (Mildly- but it didn't bother me much), 2- (Moderately- it wasn't pleasant at times), 3- (Severely- it bothered me a lot). A score of 0-21 indicate (low anxiety), 22-35 (moderate anxiety), score of 36 and above (potential concerning level of anxiety) [21].

The fifth section determined the prevalence of stress using the Perceived Stress Scale-10 (PSS). PSS is a 10-item scale that is used to assess respondent's perception of stressful experiences over the previous month. Items on the scale are rated on a 5-point Likert scale which ranges from: 0- (Never), 1- (Almost Never), 2- (Sometimes), 3- (Fairly Often), 4- (Very Often). The scores were calculated after reversing the positive item's score. It has a minimum score of 0 and a maximum score of 40, a high score indicates greater stress [22]. Six out of the 10 items of the PSS-10 are considered negative (1,2,3,4,5,6) and the remaining 4 are positive (7,8,9,10). A score of 0-13 represent (low stress), 14-26 (moderate stress) and 27-40 (high perceived stress) [23].

Pre-testing of the instrument was conducted using 40 respondents at public hospitals with Mental Health Units in the Cape Coast Metropolis and Komenda-Edina-Eguafo-Abirem Municipality, Ghana to improve

the validity and reliability of the instrument. The Cronbach's alpha reliability coefficients for the instrument was .910 after pre-testing.

Data Analysis

The responses were edited, coded and scored using Statistical Package for Social Sciences (SPSS) version 23.0 and descriptive statistics were used. The editing procedure was used to check whether respondents followed instructions correctly and to check if all items on the questionnaire were responded to. A 95% confidence interval was considered for this study. Multinomial logistic regression was used to predict the socio-demographic characteristics influencing depression (minimal, mild, moderate, severe), anxiety (low, moderate, severe) and stress (low, moderate, high).

Results

Demographic Data of Respondents

Table 1 shows that, 60.1% of the respondents were females and 69.1% of them were between 25 to 34 age range. More than half (59.5%) of the respondents were diploma holders. It was found that 46.6 % of the nurses worked at Accra Psychiatric Hospital. The results revealed that, 28.3% of the respondents had spent 4 to 6 years in the nursing profession and 50.2% of them earned between 1500 to 2000 Ghana cedis monthly equivalent to 300-400 US dollars.

Table 1
Distribution of Demographic Variables of Respondents N=311

Variable	Frequency	Percentage (%)
Gender		
Male	124	39.9
Female	187	60.1
Age		
18-24	8	2.6
25-34	215	69.1
35-44	86	27.7
45 and above	2	.6
Marital status		
Single	140	45.0
Married	168	54.0
Divorced/separated	2	.6
Widowed	1	.3
Educational status		
Diploma	185	59.5
Bachelor’s degree	121	38.9
Master’s degree	5	1.6
Name of Hospital		
Ankaful Psychiatric Hospital	66	21.2
Accra Psychiatric Hospital	145	46.6
Pantang Hospital	100	32.2
Years spent in the nursing profession		
Less than 1 year	4	1.3
1-3	54	17.4
4-6	88	28.3
7-9	84	27.0

Variable	Frequency	Percentage (%)
10 and above	81	26.0
Department/ward		
Administration	7	2.3
OPD	49	15.8
Acute ward	167	53.7
Chronic ward	88	28.3
Monthly income		
Less than 1500 cedis	40	12.9
1500-2000 cedis	156	50.2
2100-2900 cedis	106	34.1
3000 cedis and above	9	2.9
Religion		
Christianity	282	90.7
Islam	27	8.7
Traditional religion	2	.6
Source: Field Survey (2020)		

Prevalence of depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana.

The results in Table 2 shows that 92.0% of the study respondents experienced minimal depression whilst 2.3% experienced severe depression. It was found that 96.5% and 3.2% of the respondents experienced low and moderate anxiety respectively. It was observed that 56.6% of the respondents experienced low stress and 42.8% experienced moderate stress.

Table 2
Distribution of Results of Prevalence of Depression, Anxiety and Stress. N=311

Variable	No.	%
Depression		
Minimal depression (0-13)	286	92.0
Mild depression (14-19)	16	5.1
Moderate depression (20-28)	2	.6
Severe depression (29-63)	7	2.3
Anxiety		
Low anxiety (0-21)	300	96.5
Moderate anxiety (22-35)	10	3.2
Severe anxiety (36 and above)	1	.3
Stress		
Low stress (0-13)	176	56.6
Moderate stress (14-26)	133	42.8
High perceived stress (27-40)	2	.6
Source: Field Survey (2020)		

Prevalence of work place risk factors of depression, anxiety and stress among nurses in public psychiatric hospital in Ghana.

Table 3 indicate that, 42.4% of the respondents indicated “No” to the statement “are you satisfied with your current job”. The results showed that 35.7% indicated “Yes” to the statement “have you experience workplace violence in the past 1 month”. Additionally, 92.3% of the respondents indicated “No” to the statement “do you have a history of chronic illness” and 86.5% responded “No” to the statement “Do you drink alcohol”.

Table 3
Distribution of Results of Risk Factors of Depression, Anxiety and Stress N=311

statement	Yes		No		Not sure	
	Freq	%	Freq	%	Freq	%
Are you satisfied with your current job	129	41.5	132	42.4	50	16.1
Do you work in a shift rotation pattern	293	94.2	17	5.5	1	0.3
Have you experience workplace violence in the past 1 month	111	35.7	195	62.7	5	1.6
Have you had conflict with colleagues at the work place in the past 1 month	46	14.8	255	82.0	10	3.2
Do you have a history of chronic illness	17	5.5	287	92.3	7	2.3
Do you drink alcohol	35	11.3	269	86.5	7	2.3
Source: Field Survey (2020)						

Socio-demographic characteristics that predict depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana

This study determined socio-demographic characteristics that predict depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana. To achieve this, a multinomial logistic regression analysis was carried out between socio-demographic characteristics of respondents and the psychological distress dimensions (e.g., depression, anxiety and stress).

Table 4 presents how socio-demographic characteristics of respondents predict depression. The model comprised six predictors, namely, gender, age, department, education status, hospital and income. The criterion variable was depression levels of nurses working in psychiatric hospitals. The model fitting information for the above-specified model was found to be significant, p=.008. The goodness of fit indices revealed that the data fit the model, p=.719. The Nagelkekerke pseudo-R-square value was .540 indicating that the socio-demographic variables of the respondents accounted for 54% of the variances in depression levels of mental health nurses.

The education level of respondents was found to be significantly associated with depression. Precisely, diploma and bachelor degree holders were more likely than master's holders to be minimally depressed relative to severely depressed. It was found that the department of the respondents was associated with depression. Those working in the Administration and Out Patient Department (OPD) were less likely than those in Chronic Ward to be minimally depressed comparable to severely depressed. The income of nurses is positively and significantly associated with levels of depression. Nurses with income less than 1500 cedis equivalent to 300 United States dollars are more likely than those taking 3000+ cedis

ession relative to severely depressed.

Table 4
Socio-demographic Variables Prediction of Depression

Depression		B	Std. Error	Wald	Sig.	Exp(B)
minimal	Intercept	.405	.913	.197	.657	
	Diploma	3.643	1.083	11.322	.001	38.222
	Bachelor's Degree	3.611	1.159	9.713	.002	37.000
	Administration	-3.490	1.309	7.115	.008	.030
	OPD	-2.032	1.134	3.212	.007	.131
	Acute Ward	7.955	38.718	.042	.037	2849.968
	Less than 1500 cedis	18.177	40.354	.000	.996	783.199
	1500-2000 cedis	1.490	1.176	1.607	.205	4.437
	2100-2900 cedis	1.812	1.279	2.009	.156	6.125
	Ankaful Psychiatric Hospital	-1.558	1.166	1.784	.182	.211
	Accra Psychiatric Hospital	-.777	1.163	.447	.504	.460
	18-24 years	15.084	666.813	.982	.001	355.253
	25-34 years	3.674	1.485	6.121	.013	39.400
	35-44 years	4.382	1.736	6.374	.012	80.000
	Male	-1.372	.845	2.632	.105	.254
Mild	Intercept	-17.313	.802	466.272	.000	.736
	Diploma	18.412	1.043	311.776	.000	991.935
	Bachelor's Degree	18.566	.000	231.667	.000	1156.757
	Administration	-19.028	4284.067	.000	.096	.449
	OPD	-2.303	1.396	2.719	.099	.100
	Acute Ward	7.900	38.722	.042	.838	2696.508
	Less than 1500 cedis	34.703	4061.354	7.021	.009	117.000
	1500-2000 cedis	18.484	1.021	313.954	.000	714.344
	2100-2900 cedis	18.090	67.000	3.713	.000	107.516

a. The reference category for criterion variable: severe.

Reference groups for predictors: Education status- *Masters*; Department- *Chronic Ward*; Income-*3,000* er-*Female*.

	Ankaful Psychiatric Hospital	-1.386	1.384	1.003	.317	.250
	Accra Psychiatric Hospital	-.288	1.302	.049	.825	.750
	18-24 years	16.911	3210.424	2.796	.000	220.221
	25-34 years	17.040	3109.286	1.906	.000	251.227
	35-44 years	17.183	3109.286	1.911	.000	290.416
	Male	-1.168	.977	1.429	.232	.311
moderate	Intercept	-19.393	1.225	250.716	.000	123.451
	Diploma	18.294	1.683	118.119	.000	881.197
	Bachelor's Degree	18.699	.000	114.181	.000	132.296
	Administration	-10.299	.704	42.310	.000	.336
	OPD	-2.002	167.881	.207	.009	.135
	Acute Ward	17.204	106.706	.026	.008	296.237
	Less than 1500 cedis	18.218	18971.329	.000	.999	816.658
	1500-2000 cedis	18.777	16902.236	.000	.999	142.193
	2100-2900 cedis	1.891	17528.482	.000	.999	6.625
	Ankaful Psychiatric Hospital	-1.528	.000	.987	.873	.217
	Accra Psychiatric Hospital	18.045	.000	.564	.443	686.257
	18-24 years	16.911	1414.522	2.990	.000	220.267
	25-34 years	5.625	236.233	1.981	.001	277.188
	35-44 years	18.857	23.080	9.023	.000	154.868
	Male	-.916	1.643	.311	.577	.400

a. The reference category for criterion variable: severe.

Reference groups for predictors: Education status- *Masters*; Department- *Chronic Ward*; Income-*3,000 and above*; Hospital- *Pantang*; Age- *45 and above*; Gender-*Female*.

Table 5 presents the analysis of how socio-demographic variables of respondents predict anxiety. The model comprised six predictors, namely, gender, age, department, education status, hospital and income. The criterion variable was the anxiety levels of nurses working in psychiatric hospitals. The model fitting information for the above-specified model was found to be significant, p=.026. The goodness of fit indices revealed that the data fit the model, p=.059. The Nagelkekerke pseudo-R-square value was .380

indicating that the socio-demographic variables of the respondents accounted for 38% of the variances in anxiety levels of mental health nurses.

The findings suggest that higher levels of education are associated with lower levels of anxiety. This is to say that nurses who have diploma degrees are more likely to be anxious than those with a master's degree. Nurses working at the Ankaful Psychiatric Hospital and Accra Psychiatric Hospital are likely to have higher levels of anxiety than those working in Pantang Hospital. This study indicate that the age of the respondents was associated with anxiety. Younger nurses are more likely to suffer from severe anxiety as compared to older nurses. Furthermore, the results also found that male nurses were more likely than female nurses to have low anxiety relative to severe anxiety.

Table 5
Socio-demographic Variables Prediction of Anxiety

Anxiety		B	Std. Error	Wald	Sig.	Exp(B)
low	Intercept	20.335	1.803	127.237	.000	67.906
	Diploma	-.137	1827.846	192.000	.909	.872
	Bachelor's Degree	-15.556	1.503	107.152	.000	.757
	Administration	16.736	1.296	166.872	.000	185.329
	OPD	16.779	5856.834	.001	.998	193.958
	Acute Ward	16.762	3170.651	.003	.996	190.986
	Less than 1500 cedis	-16.524	2322.514	.006	.994	.663
	1500-2000 cedis	.041	3058.412	.002	.900	1.041
	2100-2900 cedis	.062	1.279	.002	.961	1.064
	Ankaful Psychiatric Hospital	-.014	.852	1. 987	.007	.514
	Accra Psychiatric Hospital	-17.748	.742	571.722	.000	.659
	18-24 years	-7.736	128.941	34.952	.004	.390
	25-34 years	-7.692	24.253	76.751	.010	.683
	35-44 years	-14.969	1.735	74.396	.000	.155
	Male	17.516	.656	712.585	.000	404.460
moderate	Intercept	18.949	1.414	179.531	.000	12.987
	Diploma	-1.848	182.846	111.000	.045	.158
	Bachelor's Degree	-18.949	127.000	219.000	.007	.896
	Administration	18.693	59.000	318.087	.076	131.333
	OPD	16.658	5856.834	.000	.908	171.650
	Acute Ward	17.222	3170.651	.000	.996	301.208
	Less than 1500 cedis	-18.082	2322.514	.000	.994	.403
	1500-2000 cedis	-1.099	3058.412	.000	.980	.333
	2100-2900 cedis	-1.810	.000	.000	.342	.164

a. The reference category for the criterion variable is: severe anxiety

Reference groups for predictors: Education status- *Masters*; Department- *Chronic*; Income-*3,000 and* [illegible] *emale*.

Ankaful Psychiatric Hospital	-.507	.000	.000	.326	.602
Accra Psychiatric Hospital	-18.654	.000	.000	.792	.921
18-24 years	-9.681	128.936	19.940	.006	.243
25-34 years	-11.084	24.215	10.647	.021	.536
35-44 years	-19.400	65.907	9.954	.000	.756
Male	17.516	7.090	25.781	.000	403.461

a. The reference category for the criterion variable is: severe anxiety

Reference groups for predictors: Education status- *Masters*; Department- *Chronic*; Income-*3,000 and above*; Hospital- *Pantang*; Age- *45 and above*; Gender-*Female*.

Results from Table 6 presents how socio-demographic characteristics of respondents predict their level of stress. The model comprised six predictors, namely, gender, age, department, education status, hospital and income. The criterion variable was the stress levels of staff working in psychiatric hospitals. The model fitting information for the above-specified model was found to be significant, p=.043. The goodness of fit indices revealed that the data fit the model, p=.107. The Nagelkekerke pseudo-R-square value was .610 indicating that the socio-demographic variables of the respondents accounted for 61% of the variances in stress levels of mental health nurses.

There appears to be a negative association between educational level and stress such that nurses with higher educational level are more likely to experience lower levels of stress and vice versa. Additionally, it was found that, nurses in the Administration and OPD are more likely to be highly stressed than those in the Acute Ward and Chronic Ward. However, those in the Chronic Ward are more likely to have higher levels of stress than those in the Acute Ward. It can be indicated that the income of nurses is negatively and significantly associated with stress levels. Thus, nurses who take a higher amount of income are likely to experience low stress levels than those with relatively smaller income. The result generally indicates that, older nurses are likely to experience low levels of stress and younger nurses are more likely to have high levels of stress.

Table 6
Socio-Demographic Variables Prediction of Stress

Stress		B	Std. Error	Wald	Sig.	Exp(B)
low	Intercept	16.931	1.506	126.357	.000	24.12
	Diploma	-12.267	1.811	45.907	.000	.704
	Bachelor's Degree	-12.741	1.133	126.457	.000	.929
	Administration	-.251	6810.055	98.000	.000	.285
	OPD	-16.382	1101.237	64.000	.008	.683
	Acute Ward	.009	.266	87.001	.042	1.991
	Less than 1500 cedis	-.096	1531.205	1.000	.000	.909
	1500-2000 cedis	-13.668	775.087	.986	.000	.156
	2100-2900 cedis	-.052	.699	.941	.005	.053
	Ankaful Psychiatric Hospital	-16.113	1124.354	.989	.000	.106
	Accra Psychiatric Hospital	-.139	.264	.599	.027	.870
	18-24 years	-.219	1132.185	1.268	.000	.245
	25-34 years	-11.248	326.098	.972	.001	.303
	35-44 years	-.080	1.431	9.955	.003	.083
	Male	-16.745	.239	4920.261	.000	.342
moderate	Intercept	15.544	1.009	237.230	.000	7.983
	Diploma	-11.188	1.425	61.615	.000	.385
	Bachelor's Degree	-11.555	2.000	78.109	.000	.586
	Administration	-.391	810.550	.000	.900	.676
	OPD	-16.407	101.732	.000	.908	.488
	Acute Ward	.012	23.000	.000	.075	1.012
	Less than 1500 cedis	-.127	1531.205	1.0860	.000	.136
	1500-2000 cedis	-13.759	775.087	.986	.000	.056
	2100-2900 cedis	-.068	665.000	1.765	.000	.934

a. The reference category for the criterion variable is: high stress

Reference groups for predictors: Education status- *Masters*; Department- *Chronic*; Income-*3,000 and* ...*emale*.

	Ankaful Psychiatric Hospital	-16.045	3452..456	.989	.000	.076
	Accra Psychiatric Hospital	.184	.000	.00	.064	1.202
	18-24 years	-.292	1132.185	1.000	.000	.747
	25-34 years	-11.561	326.095	.972	.001	.534
	35-44 years	-.107	98.090	2.456	.000	.899
	Male	-17.221	.604	238.054	.000	.318
a. The reference category for the criterion variable is: high stress						
Reference groups for predictors: Education status- *Masters*; Department- *Chronic*; Income-*3,000 and above*; Hospital- *Pantang*; Age- *45 and above*; Gender-*Female*.						

Discussion

The aim of this study was to assess the prevalence and determinants of depression, anxiety and stress among psychiatric nurses in Ghana. This study revealed that an overwhelming majority of mental health nurses, over 90%, experienced minimal depression and low anxiety. Stress, however, had a different trend of results in this study. Although, a larger percentage of mental health nurses experienced low stress (56.6%), a relatively high number of them were moderately stressed (42.8%). In our view, the presence of minimal depression and low anxiety does not necessarily mean that these two psychological distress variables are non-existent in the nursing career. Rather, it could be attributed to the fact that depression and anxiety among these mental health nurses in Ghana are being managed properly. Generally, it could be said that mental health nurses in this study experienced low to moderate stress.

Contrary to the findings of this study, [24–26] recorded moderate to a high prevalence of depression, anxiety and stress among nurses. However, in [26] study, more than half of the nurses experienced low to moderate stress levels which corroborates the findings of this study. These discrepancies observed between the findings of this study and previous studies could be attributed to differences in the study settings and population. Whereas this study focused on mental health nurses in Ghana, previous studies have concentrated on psychological distress among general nurses with only a few of them focusing on mental health nurses [17, 25].

Findings in this study revealed that the mental health nurses were not satisfied with their current job, probably, due to their conditions of work such as heavy workload, low salaries, low incentives, bad leadership, few equipment available for use, among others. Conditions at the workplace such as heavy workload, conflict and violence can be associated with a high risk of developing mental health condition among health care professionals [6, 13, 27]. Although their source of dissatisfaction is unknown, the understanding is that these sources of dissatisfaction pertain to the work. An obvious one, which was found in this study, is working in the shift rotation pattern, especially when the shift rotations come with different role and responsibilities. These findings corroborate with several other previous studies in this

area. Studies conducted by [1, 13, 17] have shown that the risk factors of depression, anxiety and stress among nurses include personal experience, economic status, emotional maturity, heavy workload, different shift rotation and work experience.

This study revealed that there is a positive association between educational level and depression such that nurses with higher educational level are more likely to have a higher level of depression and vice versa. However, the findings suggest that higher levels of education are associated with lower levels of anxiety. The study also found a negative association between educational level and stress. For instance, those with higher educational level are more likely to experience lower levels of stress and vice versa. This confirms the findings of [28] study in Taiwan, which found that nurses without degree showed high levels of job stress than nurses with a degree. [17] also found that nurses who obtained a university degree were more likely to develop depression and anxiety. However, [17] found a positive association, this study found a negative association.

Although the department where nurses work was not significantly associated with anxiety levels however, the association was significant in the case of depression and stress. The result found that mental health nurses working in Administration and OPD are more likely to have higher stress and depression levels than those in the Acute Ward and Chronic Ward. The findings of this study reflect the views of scholars that nurses who work in departments such as the emergency unit and intensive care units experience a high rate of mental health challenges as compared to other nursing staff because of increased workload and dealing with death situations [1, 13].

In this study, it can be indicated that the income of mental health nurses is positively and significantly associated with levels of depression. Thus, nurses who take a higher amount of income are more likely to have higher levels of depression than those who take a relatively smaller amount. It was found that the income of nurses is negatively and significantly associated with stress levels. This finding is consistent with the study by [9] who found that middle to high-income earners was less likely to suffer from stress. Whereas this study did not find any association between income and anxiety levels, [9] observed; there was a significant association between income and anxiety level.

Even though gender was not significantly associated with depression, the results suggest that female mental health nurses have higher chances of experiencing higher levels of anxiety. The findings further revealed that male mental health nurses have more chances of experiencing higher levels of stress. This is corroborated by [29] study, where male nurses had a significantly lower risk for anxiety when compared to female nurses.

Conclusion

Mental health nurses experienced minimal depression and low anxiety levels and a greater percentage of them experienced low to moderate stress levels. Heavy workload, conflict and violence at the work place were associated with a high risk of developing depression, anxiety and stress among nurses in public

 degree are more likely to experience depression

than those with diploma however, mental health nurses with diploma are more likely to experience anxiety and stress than those with degree. These findings have implications on Continuing Professional Development programmes for mental health nurses on management of depression, anxiety and stress. Measures to facilitate the easy enrolment of mental health nurses into higher level of education should be instituted by stakeholders. It is suggested that, further research should examine the effects of depression, anxiety and stress on mental health nurses' work performance.

List Of Abbreviations

BAI Beck's Anxiety Inventory

BDI Beck's Depression Inventory

OPD Out Patients Department

PSS Perceived Stress Scale

SPSS Statistical Package for Social Sciences

WHO World Health Organization

Declarations

Ethics approval and consent to participate

This study was performed in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of the University of Cape Coast with reference ID (UCCIRB/CHAS/2019/210). The purpose of the study, anonymity, voluntary participation and confidentiality of the information was explained to the respondents to seek their informed consent. Written consent was obtained from each of the study respondents before data collection. Participation in this study was voluntary and respondents could pull out from it at any point in time without any adverse effect.

Consent for publication

Not applicable

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that, they have no competing interests.

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Authors' contributions

All authors contributed to the conception and design of the study; SOA and NIEE contributed to the collection of data; SOA, JPN and NIEE contributed to data analysis and interpretation; All authors read and approved the final manuscript submitted.

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