Determinants of Depression Among Health Care Professionals in the Northern Region, Ghana: A Cross-Sectional Empirical Study

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ABSTRACT

Background: Depression is increasing alarmingly across the globe; precipitated by a combination of factors ranging from socioeconomic instabilities to various kinds of stress. Depression denotes a mental health disorder characterized by prolonged sadness, feeling of helplessness, lack of interest in doing everyday activities cumulating negative consequences on an individual's well-being and ability to function effectively in society. The condition is characterized by absence of positive effects, lack of interest in doing everyday activity, prolonged and persistent sadness and feeling of hopelessness. This mental health condition, if not detected early and mitigated, can devastate an individual's quality of life and reduce productivity. Research shows that the COVID-19 pandemic greatly impacted the mental health of Ghanaians, with Health Care Workers(HCWs)-frontliner, being the worst affected.

Purpose: The study aimed to explore the determinants of depression among healthcare workers (HCWs) in the Northern Region of Ghana at the height of the COVID -19 pandemic.

Methods: We employed a cross-sectional study design, with a sample size of 360 HCWs, randomly sampled using a multi-stage sampling technique: purposive sampling of three districts; stratification of health professions, and systematic sampling of respondents. Data collected was analyzed using Statistical Package for the Social Sciences (SPSS) software.

Results: The study revealed that depression among HCWs was pervasive based on the Patient Health Questionnaire (PHQ9) scale. Statistically significant determinants of depression among HCWs were loss of a loved one, sexual harassment at work, the lack of social support system from government (employers) and society, vulnerability and proximity/exposure to COVID-19 cases. Providing counselling services, social and economic support system to HCWs can reduce the incidence of depression.

Keywords

Introduction

Depression is increasing alarmingly across the world; precipitated by a combination of factors ranging from socioeconomic instabilities, to stressors resulting from climate change, the world is faced with a growing mental health burden [1,2]. Depression is a common mental health illness characterized by absence of positive effects, lack of interest in doing everyday activity, prolonged and persistent sadness and feeling of hopelessness [3]. The subject of depression and other mental health illnesses is mostly ignored and hardly spoken of particularly across the Sub-Sahara African region particularly, Ghana [4]. Consequently, most countries dedicate just a token of their healthcare budget into mental health. For instance, according to the WHO, the Government of Ghana's expenditure allocated to mental health services in 2017 was just 1.1% of the country's total budgetary allocation to health. [3]. Depression refers to a wide range of mental health problems characterized by the absence of a positive effects (a loss of interest in enjoyment of ordinary things and experience), low mood coupled with a range of associated emotional, cognitive, physical, and behavioral symptoms [5].This condition and other mental health illnesses are

usually met with stigmatization and negative responses resulting in non-reporting by patients and their families [6]. Such reactions, coupled with the general lack of investment have culminated in a significantly low number of professionals pursuing this field. Consequently, very little to no professional help exists for the ever-increasing number of patients suffering from depression and other mental health illnesses [3,7].

The global COVID-19 pandemic and its associated effects including loss of lives, loss of livelihood, and lockdowns were the perfect trigger for an exploding rate of depression and mental health rates [1]. The healthcare workforce operating as frontline personnel against the Covid-19 pandemic has been highly affected physically and psychologically. Research indicates that, as the pandemic evolved around the world, healthcare workers suffered from fear, anxiety, depression, and other psychological conditions; in fact, most of the initial cases and deaths announced in Ghana in the early days of the pandemic were of healthcare workers [8].

While some academics and researchers are beginning to investigate this area, data on depression and other mental health challenges in Africa remain inadequate due to the significantly low investments by governments and policymakers in the mental health discipline [9].

Methodology
Study Design
An analytical cross-sectional study was carried out to assess the risk factors and effects of depression on health workers in Northern Region of Ghana. This study design was deemed appropriate as researchers' intent was to compare the effect of several variables on depression simultaneously [10]. The dependent variable was depression with explanatory variables, based on previous researches being age, gender, income, educational level, category/specialty of health profession, location, among others, and their association with depression among healthcare workers in the Northern Region of Ghana. Additionally, the study used participants' responses as a snapshot to explore the existing relationship between the dependent variable (self-reported depression levels) and the different independent variables [11].

Study Setting
The study was conducted in three purposively sampled districts (Urban, Peri-urban and Rural) in the Northern Region of Ghana. The Northern Region of Ghana has a population of 2,310,939 with a total of 5,403 healthcare professionals of all categories

serving the population translating to a crude index of 2.3 health professionals per 1,000 population [12].

Sampling
A multistage sampling technique was used to select respondents for the study. This involved a purposive sampling of three study districts (Tamale, Savelugu and Nanton), which have cosmopolitan urban, peri-urban and rural characteristics respectively. The sampling continued with a stratified sampling of various health professionals (clinical care [80.3%], public health [16.3%] and administrative professionals [3.4%]), and systematic sampling to select study subjects from the various strata. The results of the sampled respondents are provided in Table 1.

Data Collection Methods and Tools
Respondents were given a digital self-administered questionnaire to answer. To accomplish this, respondents were contacted by phone for an introduction to the research and to seek respondents' consent. The data collection tool was then sent to respondents by email, WhatsApp, and Kobo-collect forms. These approaches were implemented to meet the government's COVID-19 put in place at the time of this study. To encourage participation and ensure privacy no personally identifiable information was included in this questionnaire.

Variables
Dependent Variable: The dependent variable of the study was depression. Depression level was determined using Patient Health Questionnaires-9 (PHQs-9). This is a commonly used tool to screen depression and has been adapted to screen the level of depression among participants of this study. This tool has been proven to have a high sensitivity for major depression of 88% and a specificity of 88% (possible false positive of just 12%) according to Maurer et al.; The result of the PHQ-9 analyzed into a five-point-ordinally weighted Likert scale variable measuring the level of depression serves as outcome variables for which appropriate statistical analysis is employed to draw any association to other independent variables.

Independent Variables: The independent variables of the study were age, gender and estimated monthly income/expenditure) of HCWs, history of morbidities, location of work with living and working arrangements, nature of work, history of substance use, social networks, history of traumatic experiences, impact of COVID-19, perception of social support and their coping strategies against depression.

Table 1: Selected respondents across the three study districts.

District	Total number of staff (A)	Proportion (B) = (A / ΣA)	Proportion of SS (C) = B*360	Clinical care professionals selected (80.3% of total staff)	Public health professionals selected (16% of total staff)	Administrative professional selected (3.4% of the total staff)
Tamale	1563	0.689153439	248	**199**	**40**	**9**
Savelugu	580	0.255731922	92	**74**	**15**	**3**
Nanton	125	0.055114638	20	**16**	**3**	**1**
Total	2268	1	360	290	58	12

Source: Field Study, 2022

Results and Discussion

Levels of Self-Reported Depression among Healthcare Workers

We used the PHQ9 standard screening tool to evaluate the level of depression among healthcare workers in this study [13]. We found (refer to Table 2) only 7.5% of healthcare workers reported no depression on the PHQ9 self-assessment score on one hand. On the other hand, 50% of healthcare workers were ranked as borderline (low to mild depression) requiring a need for further professional diagnosis or advice, whilst 42.5% were in depression levels needing minor management plans including counselling (i.e., mild to moderate depression), to those needing urgent specialist assessment and management. This level of depression expressed among healthcare workers is significantly higher than the general population estimates [14,15]. Furthermore, at 42.5%, the depression levels identified among healthcare workers in this study affirm prior estimates of 33%-56.1% found among the healthcare population in other studies [16-18]. These levels of depression among healthcare workers in the selected districts are an indication of a growing and alarming phenomenon which is a wake-up call for urgent attention.

Table 2: Self-Assessment of Depression among Health Care Workers (Analyzed from PHQ-9).

Level of self- reported depression	Number of respondents	Percentage (%)
None	27	7.5
Minimal depression	180	50
Mild depression	63	17.5
Moderate depression	61	16.9
Moderately severe depression	22	6.1
Severe depression	7	1.9

Source: Field Study, 2022

Determinants of Depression among Healthcare Workers

This study revealed that the distribution of depression among healthcare workers did not significantly differ according to age, gender, or marital status. A Kruskal-Wallis H test did not reveal any statistical difference between the level of depression across age, gender, or marital status (see Table 3). This outcome is, however, contrary to other findings [15,19], which suggests a rather higher rate of depression among females than males, as well as higher depression rates among young and older populations. Such papers largely based such conclusions on the general population rather than healthcare workers. Even so, such studies [15] found no significant difference in depression levels of males and females in South Africa, even though the data suggested otherwise in Ghana. Additionally, the sampling difference whereby out-of-working age groups i.e. aged populations over 60 years and younger adolescents were included, could have skewed the prevalence of depression across age groups in prior studies. This was not the case in this study where the sampling of only working-aged populations with similar characteristics did not elicit the difference in depression level across the age range in this study.

On financial status, several researchers have found depressive outcomes worsen with poorer financial status [20-22]; whilst this study did not evaluate the financial status of respondents in a binary poor vs good financial status, respondents' monthly income was categorized from low to high earners with the percentage of monthly expenditure to their monthly income calculated to evaluate whether this had any influence on the level of depression. Our findings indicate that whilst only a few respondents (7.5%) spent less than a quarter of their monthly earnings by the end of the month, a high percentage of respondents (50.3%) spent more than 75% of their monthly earnings within the month leaving little to none to save; a great worry for many HCWs, and a triggering factor of depression. Some 33.9% of respondents reported expenditures beyond their monthly income; another worrisome phenomenon of potential depression since these expenditures above incomes can lead to perpetual debts. Based on these metrics, it was realized that self-reported depression among healthcare workers varied across the percentage of monthly expenditure to their income.

Table 3: Socio-Demographic Characteristics of Respondents.

Row Labels (n)	Not depressed (27)	Minimal depression (180)	Mild depression (63)	Moderate depression (61)	Moderately severe depression (22)	Severe depression (7)	Kruskal-Wallis H (P)
Gender							.385
Female (n=196)	11(5.6)	100 (51.0)	34(17.3)	33(16.8)	15(7.7)	3(1.5)	
Male (n=164)	16(9.8)	80(48.8)	29(17.7)	28(17.1)	7(4.3)	4(2.4)	
Age Group							.177
18-25 (n=35)	3(9)	11(31)	14(40)	4(11)	3(9)	0	
26-35 (n=181)	18(10)	79(44)	28(15)	39(22)	10(6)	7(4)	
36-45 (n=125)	6(5)	75(60)	20(16)	15(12)	9(7)	0	
46-59 (n=19)	0	15(79)	1(5)	3(16)	0	0	
Marital Status							.107
Single (n=124)	13(10.5)	66(53.2)	19(15.3)	19(15.3)	5(4.0)	2(1.6)	
Married (n=221)	13(5.9)	105(47.5)	43(19.5)	39(17.6)	16(7.2)	5(2.3)	
Divorced (n=2)	1(50)	1(50)	0	0	0(0)	0	
Widowed (n=13)	0	8(61.5)	1(7.7)	3(23.1)	1(7.7)	0	

n=frequency, other variables are expressed as number (percentage)
Source: Field Study, 2022

When financial level was considered in other studies, depressive outcomes were found to be influenced by such measures [21,22].

Poor health status and a history of ill-health have been postulated to correlate with depressive outcomes. The financial burden of ill-health and stress on the individual and family at large are documented as some of the main causes of depression [23]. Both National Health Service (NHS) and Pham et al., [23,24] allude to the causal relationship between illnesses and depression. However, whilst our study showed that healthcare workers who reported being in "fair health status" (15.8%) and "poor health status" (0.005%) also reported some level of depression, thus, minimal-to-severe depression; at the overall population level, we did not find statistically significant relationship between health status and depression. The very low number of respondents who were in the poor health category (2 of 360) or 0.005% in this study was not adequate to affect the overall test statistic of association, but we noted that all the "poor-health" respondents were also moderately severely depressed which would confirm the findings [23]. This inference was further strengthened by our findings, which show that depression varied across respondents when a history of chronic condition was considered (p-value of <.001). Additional papers including the WHO factsheet on depression allude to the linkage between health status and depression [14,25].

Respondents had a poor attitude toward routine annual medical check-ups (physical examination), with close to 80% reporting never had a routine medical check-up. Such poor health-seeking behaviour according to prior studies [26] leads to compounding health conditions that result in depression. The WHO also affirms that the lack of contact with healthcare services including mental health specialists leads to a situation where a high percentage of depression is left undiagnosed, especially among LMICs such as Ghana [14]. This study further found that a high percentage (45%) of respondents who visited the hospital in the last six months had done so because of seeking treatment rather than for routine medical checkups. When put to a statistical test, depression was found to vary according to whether HCWs had sought healthcare in the last six months (p<.001). Since ill- health has been shown to correlate with depressive outcomes [26], this link between depression and recent assessment of healthcare is not so diverse.

We found that a high percentage (92.2%) of respondents reported being stressed at work, however, the influence of stress on depression among HCWs was not statistically significant. Counseling centers, peer-engagement groups conflict-resolution and conflict-resolution mechanisms at work could be a possible way of managing stress among healthcare workers. However, such systems were not widely available across facilities in the Northern Region as only 35% of respondents indicated that their facilities had some conflict resolution mechanism; the majority (65%) did not have any such system. Available evidence [27] show that there is a better depressive outcome when positive conflict resolution systems are put in place at workplaces. The findings of this study corroborate this assertion as healthcare workers whose facilities did not have any conflict resolution mechanism in place had higher odds of being in a higher level of depression than the workers whose facilities had conflict resolution mechanisms in place. Conflicts are a source of stress, therefore having a situation where work-based conflicts are unresolved because of workers having no avenues to seek redress could ultimately lead to depression.

The study revealed that substance use among healthcare workers was very low; 91.9% reported never using alcohol, with only 8.1% indicating to be occasional consumers of alcohol. The level of self-reported depression varied between respondents who had never consumed alcohol and those who occasionally consumed alcohol (p=0.02) the logistic regression analysis (refer to Table 4) did not yield a significant result even though the odds belonging to a higher level of depression were lower among non-drinkers (OR:0.93; 95%CI:0.42-2.07). Similarly, regarding self-medication of prescription drugs, even though depression varied across the different levels of self-medication, (p <.001) a logistic analysis dispels such significance. Many respondents (69.2%) indicated never self-medicating, 28.9% self-medicated occasionally with some 1.9% frequently self-medicating prescription drugs. This result was at odds with two prior studies [28,29] which found depression to be significantly influenced by substance use such as alcohol and prescription or non-prescription drug use among the general population.

Social support statistically significantly determines depression among healthcare workers in the Northern Region. This study showed a strong association between the perception of social support and depressive outcomes. Respondents who indicated having no social support had a higher odd of belonging to a higher category of depression than those with very high support. Similarly, respondents who reported having very low social support had a higher odds of belonging to a higher category of depression than those with very high support. The same results were yielded when respondents who reported having "moderate support", and "high support" were compared to those with "very high support" (OR:3.60; p<.001) and (OR:2.93; p<.001) respectively. In summary, the analysis of perceived social support in this study supports the believed inverse correlation between social support and depressive outcomes [30,31]. Experts therefore suggest building a management model for depression based on building positive social support outcomes.

Traumatic experiences have been connected to depression over the years. Such history also has a lasting impact on the overall work output of HCWs. The evaluation of the history of traumatic experiences among healthcare workers in this study revealed that 12.5% of respondents had experienced sexual harassment, 17.5% had experienced domestic abuse, 64% had a history of involvement in motor-traffic accident, 46.9% had experienced burglary or robbery and lastly, 90% of respondents had had some history of loss of a loved one. Whilst these factors are shown through existing literature [including Negele et al., Vitriol et al., and WHO] to having some influence on the level of depressive outcomes, this study revealed that experience domestic abuse (p=0.166), history of involvement in motor traffic accidents (p=0.338), history of

Table 4: Logistic regression predicting the probability of self-reported depression.

Variables	Odds Ratio (OR)	95% Confidence Interval OR		p-value
		Lower Bound	Upper Bound	
%Monthly expenditure vs income (<=25%)	1.86	0.67	5.17	0.231
%Monthly expenditure vs income =(26%-50%)	3.00	1.35	6.65	**0.007**
%Monthly expenditure vs income =(51%-75%)	2.06	0.95	4.48	0.067
%Monthly expenditure vs income =(76%-100%)	1.03	0.48	2.19	0.946
%Monthly expenditure vs income =(100+%)	Ref.	.	.	.
History of chronic illness=(yes)	1.45	0.60	3.54	0.410
History of chronic illness=(no)	Ref.	.	.	.
Visited a hospital in last 6m=(yes)	1.74	1.00	3.03	**0.051**
Visited a hospital in last 6m=(no)	Ref.	.	.	.
Facility support for healthcare cost=(yes)	0.63	0.30	1.34	0.232
Facility support for healthcare cost=(no)	Ref.	.	.	.
Description of the location of work =1(Urban)	0.48	0.24	0.97	**0.042**
Description of the location of work=2(Peri-urban)	1.28	0.65	2.51	0.471
Description of the location of work =3(Rural)	Ref.	.	.	.
Designation=(clinical)	1.15	0.58	2.30	0.691
Designation=(other)	7.13	1.93	26.33	**0.003**
Designation=(public health)	Ref.	.	.	.
Facility has a conflict resolution protocol= (yes)	1.79	1.00	3.19	**0.050**
Facility has a conflict resolution protocol =(no)	Ref.	.	.	.
History of alcohol consumption=(never)	0.93	0.42	2.07	0.859
History of alcohol consumption=(occasionally)	Ref.	.	.	.
Frequency of pres. drug abuse=(never)	1.63	0.27	9.76	0.592
Frequency of pres. drug abuse=(occasionally)	4.22	0.69	25.96	0.120
Frequency of pres. drug abuse=(frequently)	Ref.	.	.	.
Experienced sexual harassment at work=(yes)	1.58	0.70	3.57	0.270
Experienced sexual harassment at work=(no)	Ref.	.	.	.
Loss of loved one=(yes)	2.13	1.01	4.52	**0.048**
Loss of loved one=(no)	Ref.	.	.	.
Pre-existing Covid-prone condition=(yes)	1.69	0.50	5.67	0.398
Pre-existing Covid-prone condition=(no)	0.52	0.26	1.03	0.060
Pre-existing Covid-prone condition= (don't know)	Ref.	.	.	.
Positive case reported at facility=(yes)	1.48	0.85	2.58	0.161
Positive case reported at facility=(no)	2.03	0.97	4.24	0.061
Positive case reported at facility=(don't know)	Ref.	.	.	.
Direct contact with a positive Covid case=(yes)	4.93	2.13	11.40	**<0.001**
Direct contact with a positive Covid case=(no)	1.14	0.62	2.11	0.668
Direct contact with a positive Covid case=(don't know)	Ref.	.	.	.
Perceived social support=(very low)	6.82	2.94	15.79	**<0.001**
Perceived social support=(low)	3.23	1.46	7.14	**0.004**
Perceived social support=(moderate)	3.60	1.75	7.38	**<0.001**
Perceived social support=(high)	2.93	1.56	5.50	**0.001**
Perceived social support=(very high)	Ref.	.	.	.
Avail. Of prof. counselling support at work=(yes)	0.20	0.09	0.43	**<0.001**
Avail. Of prof. counselling support at work =(no)	1.75	0.93	3.31	0.085
Avail. Of prof. counselling support at work =(don't know)	Ref.	.	.	.
Seeks counselling support outside work=(yes)	1.61	0.84	3.10	0.152
Seeks counselling support outside work=(no)	Ref.	.	.	.

*% = Percentage, Ref = Reference group. Significant p<0.05 are **bolded.***

experience of burglary or robbery (p=0.583) did not pose any significant impact on depressive outcomes among the study population. On the other hand, in congruence with WHO, a history of loss of loved ones and experiencing sexual harassment (at place of work) had a significant impact on depressive outcomes with p-values of 0.005 and 0.025 respectively. Furthermore, a logistic analysis of these significant variables showed respondents who reported experiencing sexual harassment at work had a higher odd of falling in a higher category of depression than those who had no such experience (OR:1.58; 95%CI 0.70-3.57), this revelation was however not significant (p=0.27). The impact of losing a loved one on depressive outcome was on the other hand a significant one, respondents who lost loved ones had twice the odds of falling into a higher category of depression than those who reported otherwise (OR:2.13; 95%CI 1.01-4.52; p=0.048).

This study showed that the prevalence of self-reported depression varied across the rural-urban divide. The odds of having a higher depressive outcome were lower among healthcare workers who lived in rural areas than those who lived in urban areas (OR=0.48; 95%CI=0.24-0.97; p=0.042). This supports other [32] rural-urban appraisal of prevalence factors of depression in South Africa, which found a higher percentage of depression among urban compared to rural residents. On the other hand, our findings conflict with other studies [33] which have shown a higher depressive outcome among rural populations compared to their urban counterparts. These conflicting results could be attributed to the sampling difference, i.e., older adults, including non-working populations in both studies compared to a more homogeneous working group sampled in this study are the difference which could have skewed this outcome.

Depression varied significantly across different categories of healthcare professionals, clinical care, public health and administrative professionals. A Kruskal-Wallis H test showed a statistically significant difference between the level of depression and the cadre of healthcare professionals, p=0.05. This finding is supported by similar studies [34,35] which found a higher depression outcome among different categories of healthcare professionals. Our logistic analysis of this study revealed a higher odd of belonging to higher levels of depression among staff who identified as others (neither clinical workers nor public health officers) compared to public health staff (OR:7.1; 95%CI:1.93-26.3; p=0.003). The odds of belonging to a higher level of depression were also slightly higher among Clinical care workers than public health professionals (OR:1.15; 95%CI 0.58-2.3). This relationship was, however, not statistically significant. Clinical care workers stratified in this study were more on the front-line of the COVID-19 patient care than the other professionals. The level of contact with patients alone (p=0.86) or with communities (p=0.08) did not influence the level of depression among healthcare workers.

Impact of COVID-19 related factors on depression among HCWs

The pandemic caused a huge amount of scare across the globe with frontline healthcare workers bearing some of the highest risks.

Earlier studies on this subject in Ghana [36] allude that depression and other mental health outcomes are worsened under pandemic conditions. One of the pandemic-related issues which was a cause of concern was healthcare workers with pre-existing medical conditions making them prone to COVID-19. We found depression varied significantly across respondents who had pre-existing medical conditions which made them prone to COVID-19, with p-value of <.001. Further analysis revealed that respondents who knew they had a pre-existing condition putting them at a higher risk of COVID-19 had higher odds of falling into a higher category of depression (OR:1.69; 95%CI :0.50-5.67) than those who did not know their status regarding pre-existing condition. On the other hand, respondents who were aware of not having any pre-existing condition had lower odds of belonging to a higher category of depression (OR:0.52; 95%CI:0.26-1.03). Both relationships were not, however, significant in the logistic regression analysis.

Regarding the fear caused by COVID-19 among respondents, this study revealed that depression varied significantly by whether a positive COVID-19 case had been reported at their health facility (p=0.026), or that they had come into direct contact with a positive case (p<.001). A logistic regression analysis of respondents who reported having direct contact with positive COVID-19 cases had a higher odd of belonging to a higher category of depression compared to those who did not know they had had such contact (OR:4.93; 95%CI: 2.13-11.4; p< .001). Our findings, like others [16] suggest that healthcare workers' likelihood of contact with COVID-19 increased their risk of depression. This also supports the assertion that even among healthcare workers, depression was higher among those categories with direct contact with COVID-19 cases than those without [35].

Impact of Support Systems against Depression

Social inclusion and a feeling of belonging have been found to have an inverse correlation with depressive scores [31]. To measure social inclusion, we evaluated participants' involvement in common social activities including religious organizational activities, engagement in physical activities and involvement in social groups such as keep-fit clubs. We found that depression varied between the groups involved in religious groups versus those who were not (p=0.001) with the majority (95.3%) of healthcare workers reporting to belong to a religious group. However, not all social interactions influenced depressive outcomes among healthcare workers, as self-reported depression did not vary by either respondents' frequency of engagement in physical activities (p=0.81) or their membership in social groups such as keep-fit clubs (p=0.64). Whilst these activities are largely positive for physical health, the findings of this study do not support their positive impact on depression.

Our study revealed that respondents relied mainly on social support, for example, from family (35.2%), religious teachings (28.1%), and friends, in and outside of the work environment (36.7%) as their means of managing depression. Prior studies [30] show that the use of social support mechanisms, such as these, yields positive outcomes in depression compared to the non-availability

of such systems. Furthermore, employers are mandated to provide social support systems such as counselling/psychosocial support to healthcare workers in Ghana even though, as this study reveals, the majority (58.1%) of respondents' facilities did not have such systems. A lower percentage of respondents (48.9%) found support systems outside of the work environment than those who did not. The logistic regression analysis highlighted the necessity of support systems provided in the working environment as respondents who used counselling support services at work were less likely to belong to a higher category of depression (OR: 0.2; 95%CI:0.09 – 0.43), which was a statistically significant effect (p<.001). These findings confirm assertions [34,37] that psychosocial services such as these are inadequate in LMICs such as Ghana even though such services are necessary to support staff navigating the work environment.

Conclusion

Depression is significantly higher among healthcare workers than the general population, which is much concerning. The COVID-19 pandemic worsened an already poor situation among HCWs in Northern Ghana. Inadequate social support systems from communities, and employers/working space as indicated by the respondents, aggravate the situation. Non-availability of mechanisms to address conflict situations faced by HCWs at the various healthcare facilities was a major determinant of depression among HCWs. Loss of loved ones and experience of sexual harassment at work were also significant determinants of depression. Lastly, HCWs, particularly, those who perceived that they were at a higher risk of COVID-19 were more likely to be depressed just as clinical care workers were exposed to COVID-19 cases; or even those in health facilities which reportedly identified cases reported a higher level of depression. It is important that duty-bearers and stakeholders in the Northern Region, collaborate with the Ministry of Health and the Ghana Health Services to establish workplace counselling centers, and strengthen other social support systems, recreational facilities at workplace, and peer-engagement groups among workers to support HCWs.

Limitations

This research could have benefited from qualitative information and follow-up studies into the development and or coping mechanisms of mental health and in-depth explanations of the drivers of depression among health professionals, as well as policies put in place by MOH to mitigate depression among healthcare professionals. Additionally, the rating scale PHQ-9 used to screen depression in this study was a self-rating tool rather than the gold standard clinical diagnosis. The study recommends that further research be conducted to assess the status of any existing policies targeting depression and the mental health of HCWs.

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