

Psychological impacts of COVID-19 on health professionals: A cross-sectional survey of 1000 nurses across ECOWAS countries



Research article



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Abstract

Purpose: Nurses have to adapt to various emotional and behavioral responses to provide care for COVID-19 Patients, manage the situation and follow established health protocols. This study aimed to investigate the Psychological Impact of the COVID-19 Outbreak among Nurses rendering care in Ecowas Countries (West Africa).

Design/Methodology: This present study employed an online cross-sectional survey to collect and accumulate responses from registered nurse giving care in these countries amid this coronavirus pandemic. The survey link was shared on all social networks and online platforms across the West African Region.

Findings: The results of the study showed 52% of normal anxiety level, 18% mild anxiety, 20% moderate anxiety and 10% severe anxiety. Moderate and Severe stresses were 78% and 10% respectively among the nurses whereas those with normal or low-level stress was 12%. In ordinal logistic Analysis, Nurses feel more relieved against stress and anxiety when they are not living with family members (relatives and spouses), nursing patients (with the infection) and or have any acquaintances with COVID-19 infected persons (Odd ratio < 1.0).

Practical Implications: It is suggested that the psychological well-being of nurses during this pandemic revolves around their exposure to the infection and their daily interaction with people well known as close contacts.

Scan and Read



Introduction

The COVID-19 which started with symptoms of pneumonia in Wuhan china has reached the level of been called a Pandemic affecting all countries in the World. To date (21 May,2020), there are 4,893,186 confirmed cases and 323,256 deaths globally [1]. In Africa, as of May21, all the 54 countries are affected with 95,322 cumulative cases,2995 reported deaths and 34519 recoveries [1]. South Africa has the highest number of infections with 18,003 cases [1]. Although, Africa has lower number of cases with respect to other regions like Europe, the pandemic continues to spread widely on daily basis and West African countries are not exceptions. In the ECOWAS Region, Nigeria and Ghana are the top two West African countries with increasing number of cases. The pandemic keep rising in these countries because of economic, political and cultural prowess. For instance, Nigeria known as the Giants of Africa has the largest economy while Ghana is democratically stable. Whereas the spread of the virus is high in these countries, death rate related to the COVID-19 is low when compared to a single European country such as Italy having more than 32,486 deaths. Nigeria and Ghana recorded their first cases on 27th February and 12 March respectively.

There is no vaccine or cure yet for the COVID-19, basic preventive measures by all (including health professionals, individuals and communities) remain the most essential tool to stop the propagation of the virus [1]. The World Health Organization has been supporting African Governments to train dozens of health professionals so that health surveillance can be strengthening. Nurses make up more than half of the health professionals fighting the COVID-19 pandemic and they play some vital roles at this point.

The global outbreak of the novel coronavirus comes with some psychological distress and health professionals should be aware of this phenomenon so that they can mount strategies to protect themselves and the general population [2]. When the SARS Pandemic occurred in 2003, nurses at designated hospitals in Taiwan were suffering from anxiety, depression and hostility [3]. In Saudi Arabia, frontline health workers were experiencing fear and nervousness [4]. In China, a significant number of the population and hospital workers were having anxiety related behaviors, public panic and there was shortage of medical materials across the country [5]. People had the impression that with time they will contract the fast spreading virus sooner or later. In cases where people get the infected, issues of whether there are enough beds and ventilators to accommodate them became a challenge. In addition to the flu-like symptoms of the virus, the above-mentioned challenges were creating psychological problem and the pandemic extended beyond physical symptoms.

Health workers were worried about their safety. Ethical dilemmas started rising. Some of the health care professionals begin faking symptoms of the virus in order to excuse themselves from post. This made things difficult for others to report or to keep to themselves when they

have actually contracted the virus. Health professionals become exposed to confirmed and suspected cases all the time and this caused them to be scared, traumatized and worried [6]. Other Psychological pressures from the work environment such as inadequate staff strength and shortage of personal protective equipment also fueled the situation. Mass quarantine and isolations in health centers cause a sense of hysteria, fear and anxiety for both patients and health workers. People under quarantine were feeling unsafe and forced.

These reports are evidence that health professionals confronted many mental health challenges during the previous SAR Outbreak and the psychological functioning of health workers will definitely be affected in this current pandemic. In the event of all these happenings, not all health professionals will seek comprehensive mental health care [7]. Some will be able to adopt to these stressors while others may just need psychotherapy as a timely intervention [8]. Addressing mental health Implications in healthcare professionals is also a factor to keep the pandemic under control [9]. There are many studies and reports on the psychological impacts of the pandemic on the general public, patients, significant others and particularly healthcare workers. However, no detail study has measured the cumulative Psychological impact of the COVID-19 Pandemic in the various West African Countries where there are different environments, health policies, practices and cultures. Therefore, this study investigates the psychological impacts of the pandemic on health professionals (Nurses) from the various ECOWAS Countries. The 7-item Generalized Anxiety Disorders Scale (GAD-7) and the Perceived Stress Scale (PSS-10) were the two main data instruments used in this study.

Methods

Study Design and Participants

This study relied on a web-based cross-sectional survey to collect data from the target population. The population targeted were registered nurses current practicing in the 15 or various ECOWAS Countries amid the coronavirus pandemic. The survey was widely distributed, broadcasted and posted on various online platforms and social Medias such as Facebook, Twitter, WeChat, Instagram, WhatsApp-groups, Facebook pages of professional groups, online forums, online webinars and Facebook conference Pages etc. across West Africa.

Data Collection Procedures

Data was collected between 1st April to 31st May, 2020. The names of the respondents and facilities of practice were not needed for confidentiality purposes. Participants only have to respond with their demographic characteristic (Gender, age and COVID-19 related information) and fill through the GAD-7 and Perceived Stress Scale. A total number of 1000 Nurses completed the online Survey. No sample size calculation method was employed because the readiness of

respondents to make time and use their data in filling through the survey was a major considering factor that determines the number of participants. Responses from people other than nurses were not considered and counted.

Ethical Considerations

Participation in this online survey was totally voluntarily. An electronic version of the informed consent was made available and participants were encouraged to read and understand the purpose of the study before proceeding to participate fully. Potential participants were informed that no names are needed for this survey and by accepting to take part, they have given their informed consent. The estimated time it will take for respondents to fill through the survey was made known and respondents were also reminded that they can exist the survey at any point. All responses collected after the study were destroyed.

Statistical Analysis

Data collected were analyzed with SPSS Version 22. The assumption of a normal distribution was tested by the Shapiro Wilk test, p-value was less than 0.05 and the test showed that, data was not normally distributed. Because the data was non-parametric, univariate analysis was performed to investigate the relationship between socio-demographic characteristics and the level of anxiety. Descriptive statistics were conducted for demographic characteristics, stress and anxiety level. The strength of association among significant others was tested in multivariate logistic regression analysis with 95% Confidence Interval. The Relationship (Association) between anxiety and stress experienced by the nurses was analyzed by chi-square and spearman rank correlation as the data is non parametric.

Results

Among all the nurses across the various West African Countries, 1078 respondents had access to the survey link distributed and made time to visit the survey. Of these participants, 1000 responses were valid and the remaining 78 were removed because they were not complete. Female nurses form 76% of the respondents and male nurses were 24%. Majority of the participants (70%) were within the age group of 21-30 years, Single or unmarried nurses were 64% and 74.8% of the nurses were Christians. With education, nurses holding diplomas form the majority been 48% whereas undergraduate and postgraduate degree holders were 30% and 22% respectively. Nurses from Ghana and Nigeria responded the most been 36.5% and 26.8% separately. These are presented in Table 1 and 2.

Table 1: Demographic Characteristics of the Respondents	
Variable	n (%)
Gender	
Female	760(76%)
Male	240(24%)
Age	
18-20	20(2%)
21-30	700(70%)
31-40	280(28.%)
41 and Above	0(0%)
Marital Status	
Single	640(64%)
Cohabitation/Relationship	140(14%)
Married	220(22%)
Religion	
Muslim	211(21.1%)
Christian	748(74.8%)
Tradition/Others	41(4.1%)
Educational Status	
Diploma	480(48%)
Undergraduate Degree	300(30%)
Postgraduate Degree	220(22%)
Total(N)	1000(100%)

Table 2: Respective Countries of the Nurses

ECOWAS Country of Practice	Number	Percentage
Ghana	365	36.5
Nigeria	268	26.8
Benin	78	7.8
Togo	60	6.0
Senegal	46	4.6
Ivory Coast	40	4.0
Guinea	37	3.7
Liberia	31	3.1
Gambia	28	2.8
Sierra Leone	19	1.9
Burkina Faso	16	1.6
Niger	14	1.4

Levels of Anxiety and Perceived Stress among the Responded Nurses

Table 3 shows how the cumulative anxiety levels of nurses surveyed in all the Countries during the Pandemic. Over half of the nurses (52%) had no symptoms of anxiety whereas the number of nurses with Mild, Moderate and Severe Symptom were 18%,20% and 10% respectively. The results also show that 12% of the responded nurses had normal stress while moderate and high stress levels were at 78% and 10% respectively.

Table 3: Number of Responded Nurses with different Anxiety and Stress levels (n=1000)

Anxiety Level	Number	Percentage (%)
Normal	520	52.0
Mild	180	18.0
Moderate	200	20.0
Severe	100	10.0
Stress Level		
Low/Normal Stress	120	12.0
Moderate	780	78.0
High Perceived Stress	100	10.0

Distribution of Frequency and the Relationship Between Demographic Variables and Level Perceived Stress in the Nurses.

The highest perceived stress was seen in nurse around the age of 21-30 years. Female nurses were more stressed than male nurses (74.4% vs. 25.6% respectively). High perceived stress frequency was also observed in nurses with diploma education (60%).

Table 4: Perceived Stress Range

Variables		Normal/Low	Moderate	High Score	N=1000
Age	18-20	0(0%)	20(2.6%)	0(0%)	20
	21-30	80(66.7%)	520(66.7%)	100(100%)	700
	31-40	40(33.3%)	240(33.3%)	0(0%)	280
	41 and above	0(0%)	0(0%)	0(0%)	0
Gender	Female	100(83.3%)	580(74.4%)	80(80%)	760
	Male	20(16.7%)	200(25.6%)	20(20%)	240
Marital Status	Single	60(50%)	500(64.2%)	80(80%)	640
	Married	60(50%)	140(17.9%)	20(20%)	220
	Cohabitation	0(0%)	140(17.9%)	0(0%)	140
Educational Level	Diploma	100(83.3%)	220(32.4%)	60(60%)	480
	Undergraduate	0(0%)	260(38.2%)	40(40%)	300
	Postgraduate	20(16.7%)	200(29.4%)	0(0%)	220

Factors Influencing Nurses’ Anxiety During the Pandemic (Univariate Analysis)

Table 5 shows the relationship between demographic characteristics of nurses and anxiety. Gender (Been a Male or Female), whether the nurse is living with the family, spouse or relatives and the situation where the nurse is taking care of COVID-19 patients, know someone with the infection and/or has any acquaintances with infected persons had a significant effect on anxiety ($p < 0.05$). Nursing a COVID-19 Survivor, knowing someone with the infections or related acquaintance is a more likely factor to cause a nurse to be anxious than other factors ($p = 0.002$). However, good social support, study income and incentive from their work had no significant effects on anxiety ($p > 0.05$). Table 5: Univariate Analysis of Nurses’ Anxiety.

Variables	Anxiety Level					Pvalue
	Total	Normal	Mild	Moderate	Severe	
Gender						0.007
Female	760(76%)	420(55.26%)	120(15.78%)	140(18.42%)	80(10.52%)	
Male	240(24%)	100(41.66%)	60(25%)	60(25%)	20(8.33%)	
GoodSocial Support						0.330
Yes	740(74%)	360(48.64%)	180(24.32%)	140(18.91%)	60(8.10%)	
No	260(26%)	160(61.53%)	0(0%)	60(23.07%)	40(15.38%)	
Study Income/ Incentives						0.160
Yes	520(52%)	300(57.69%)	100(19.23%)	40(7.69%)	80(15.38%)	
No	480(48%)	220(45.83%)	80(16.66%)	160(33.33%)	20(4.16%)	
Lives with Family, Spouse, Relatives						0.02
Yes	580(58%)	340(58.62%)	60(10.34%)	120(20.68%)	60(10.34%)	
No	420(42%)	180	120	80	40(9.52%)	
Nursing Someone/ Acquaintance got infected						0.002
Yes	100(10%)	40(40%)	40(40%)	20(20%)	0(0%)	
No	900(90%)	480	140	180	100	

Ordinal Regression Analysis

Results of logistic regression analysis of Factors associated with perceived stress during the Pandemic are presented in Table 6. In the model fitting $p < 0.05$ showing that OR Values are statistically significant. The results reveals that not living with a family member (spouse and relatives) prevent nurses from been stressed (protective factors) during the pandemic (OR=0.803). Again not nursing a COVID-19 patient or having related acquaintance also helps to keep stress (OR=0.983). However, Good social support, study income and incentives, living with family and nursing or knowing someone with the virus were not protective factors and can stress up nurses (as OR >1.0).

Table 6: Ordinal Logistic Regression Analysis of Factors Stressing the Nurses

Factors	Number	SE	OR	P	OR (95%CI)
Good Social Support					
Yes	740	0.136	1	0.922	(1.342,2.105)
No	260	-	1.013		
Study Income/Incentive					
Yes	520	0.114	1	<0.001	(0.644,1.022)
No	480	-	1.681		
Living with Family, Spouse Relatives.					
Yes	580	0.112	1	0.051	(0.719,1.344)
No	420	-	0.803		
Nursing Someone with Covid-19/Acquaintances					
Yes	100	0.159	1	0.914	--
No	900	-	0.983		

SE Standard Error, OR Odds Ratio, CI Confidence Interval

The Table below (7) illustrates that there is a moderate positive significant correlation between anxiety and stress among the nurses with $r=0.593$, $p= 0. 001$.As the anxiety levels increase, the stress associated with the pandemic become more and as the nurses are stressed they turned to be anxious.

Table 7: Correlation between Anxiety and Stress Experienced by Responded Nurses During the Pandemic (N=1000).

		Perceived Stress			Total	Pearson's Correlation(r)
		Normal	Moderate	High		
Anxiety	Normal	100	400	20	520	$r=0.593, p=0.001$
	Mild	20	160	0	180	
	Moderate	0	160	40	200	
	Severe	0	60	40	100	
Total		120	780	100	1000	

Discussion

Research and available evidence gathered from previous studies have stated that Pandemics and Public Health Emergencies always come with psychological consequences on the general population [10]. These psychological implications could anxiety and stress among others. With the current outbreak of the COVID-19, psychological consequences remained as an important area that need to be addressed among frontline health workers especially nurses. This study identified the psychological impacts of the pandemic on nurse across ECOWAS Countries. Apart from the 52% of the responded nurses who have normal, minimal or no anxiety, the remaining 48% of the nurses were experiencing different levels of anxiety. Mild, Moderate and Severe Anxiety representing 18%,20% and 10% respectively were experienced by nurses in West Africa. For Stress level,12% (120) nurses had normal stress,78%(780) had moderate stress and the remaining 10%(100) perceived high stress. It is not very new that nurses within West Africa are having this kind of experiences. This is because nurses as health professionals are always seeing people in pain, anguish, fear, loss and death and all these happenings can unleash the physical and emotional consequences inside them [11]. This is also the case for the ongoing COVID-19 pandemic.

Factors and circumstances like gender, nurses living with family members (spouse and relatives) and then nursing (taking care of) or knowing (acquaintance) someone with the infection do intensify these anxieties. This support the findings that the level of anxiety an individual is experiencing depends on interpersonal communication, whether the person is having or talking to people around him or her [12]. Male and female nurses have different anxiety and stress levels during this ongoing pandemic. A study done by Moreno et al., 2019 indicated such similar results concerning gender and anxiety. Among all the above-mentioned factors, acquaintance with, knowing and nursing someone with the infection have the potentials to cause more anxiety (as $p=0.002$). It is obvious that nurses must have personal protective equipments available, to wear them and limit their exposure and risk of getting infected. This will enable them to perceive less stress and anxiety and also maintain confidence in caring for COVID-19 patients. However, good source of social support, study income or incentives from work do not affect or make a different in how nurses responded to these anxieties.

With multivariate logistic regression analysis done on significant demographic variables, it indicates that not living with family members (relatives), acquaintances, as well as not caring for COVID-19 infected individuals were protective factors that can control and reduce stress among the responded nurses. On the other hand, living with family members (relatives), acquaintance, knowing, and nursing someone with COVID-19 were risk factors that can stress up the nurses and increase their exposure to stress during the pandemic. These situations do not

only increase exposure to stress but also the possibility that the nurse will acquire the infection with high contagiousness [13]. There was a moderate positive correlation between anxiety and stress. As the anxiety levels increases, the stress associated with the pandemic becomes more and as the nurses are stressed, they turned anxious. Also, the causes of these anxieties could trigger stress situation in the responded nurses

Conclusion

The COVID-19 Outbreak imposes significant psychological implications on nurses across West Africa. Infection control and prevention measures are needed to make nurses feel safe, less stress and anxious as well as significant others. These significant others could be gender, family members, acquaintance, exposure to infected patients, contacts, and even people who interact with nurses daily. Therefore, significant others influence the psychological responses of nurses.

Limitations of the study

The study aimed initially to target a large number of nurses in all ECOWAS Countries, however the questionnaire was in English and small number of nurses who could understand English in French speak West African countries were able to participate in the study. This reduced the number of nurses who were able to participate in those French speaking countries and nurses from English speaking countries participated most.

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Conflicts of Interest: I declare no conflict of interest for this study.

Disclaimer Statement: I certify that all the data collected during the study is presented in this manuscript and the study has been published elsewhere. I hereby transfer(s), assign(s), or otherwise convey(s) all copyright ownership, including any and all rights incidental thereto, exclusively to the Journal, in the event that such work is published by the Journal.

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