MAGNITUDE OF GENERALIZED ANXIETY AMONG HEALTH PROFESSIONALS WORKING ON COVID-19 AT DILLA REFERRAL HOSPITAL DILLA, ETHIOPIA

CHALACHEW KASSAW[1*] AND YIGREM ALI[1]

[1]Department of Psychiatry, College of Health Science, Dilla University, P. O. Box 419, Dilla, Ethiopia.

AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration between both authors. Author CK designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author YA managed the analyses of the study. Author CK managed the literature searches. Both authors read and approved the final manuscript.

Original Research Article

ABSTRACT

Background: In Ethiopia, Corona confirmed cases are increasing from time to time, and health care professionals were front line exposed risky groups for infection. The mental health of the health professional is vital for better care and treatment outcome patients. This study aimed to determine the health care professional's current mental health status and associated factors in response to the pandemic.

Methods: A hospital-based cross-sectional survey using a consecutive sampling technique was employed from April 5-10, 2020. Generalized Anxiety Disorder-7 (GAD-7) was the assessment tool used to determine current anxiety symptoms. Multivariate Logistic regressions at 95% CI and $p < 0.05$ were used to identify factors associated with the outcome variable.

Results: This study enrolled a total of 326 respondents, and the overall prevalence of GAD was 40.2%. Variables associated with General anxiety disorder were being female, family size 3+, nurses, working in out-patient and emergency service, and ≤ 3years working experience at 95% confidence interval, $p < 0.05$.

Conclusions: This study found that more than one-third of the respondents had a general anxiety disorder in response to the pandemic, and identified groups of the participants were female, nurses, family size 3 +, and ≤ three years of working experience. So there should be immediate psychological intervention and training for an identified group of peoples to promote the mental health status of health professionals for better and quality health service.

Keywords: Corona virus disease 2019; general anxiety disorder; health professional; Dilla; Ethiopia.

ABBREVIATIONS

AOR	*: Adjusted Odd Ratio*
CI	*: Confidence Interval*
COR	*: Crude Odd Ratio*
COVID-19	*: Consider Coronavirus Disease 2019*
GAD	*: Generalized Anxiety Disorder*
KAP	*: Knowledge, Awareness and Practice*

*Corresponding author: Email: 1234berekassa@gmail.com;

1. INTRODUCTION

The 2019 coronavirus disease (COVID-19) pandemic is rapidly increasing in Ethiopia, and more than 93,421 cases (1426 death) were recorded, until the time of the current study [1].

The virus is highly contagious and transmitted from human to human through physical contact, respiratory droplet, and surface contact with symptoms of the infection are fever, cough, fatigue, breathing difficulty [2]. The risk of health professionals for contracting the infection was estimated to be 0.01%, and higher than that of the general population, and over two thousand COVID-19 cases are confirmed among 476 hospitals nationwide, with nearly 90% of them from Hubei Province [3].

During the pandemic, in china 3.8%, the united states 3%, Spain 20 %, Italy 10% of health care professions were getting infected, and the total number of deaths reaches more than 250; the highest number recorded in the United States and Italy [4].

In Africa, the risk of a health care professional getting infections has shot up to 203 percent since late May, according to the African health arm force report based on the spike of community transmission and scarce resources of protection material [5].

The major problems for getting high risk for contracting the infection in Africa were scarce of protective equipment such as face mask, gowns, gloves and face shield or goggles, adequate physical setting for treating confirmed cases, and trained health professionals [6].

The magnitude of mental health problems in China during the pandemic period among health care professionals was 71.5% psychological distress, 50 .4% depressive symptoms, 44. 6% anxiety and 34% insomnia and Nurses, women, frontline health care workers, and those working in Wuhan, China was the most common affected groups of health professionals [7].

The possible reasons for experiencing psychological problems among health care professionals during this pandemic period were the high fatality nature of the virus, isolation from their family members, fear of infecting their family members, the rapid increment of the cases, and lack of adequate personal protective materials [8].

The mental health of health care providers is vital for better emotional and physical care, treatment outcome, compassion, and empathy of the patient and also to enhance the physical and psychological resilience of health care providers to the pandemic and job satisfaction [9].

The psychological impact of the pandemic on health care providers in Africa will be estimated to be high due to the significant socio-economic crisis of infection, scarcity of personal protective materials, and lack of adequately trained health care professionals.

The purpose of this study was to determine the magnitude of General anxiety disorder and its associated factors among health care providers working at the hospital during the pandemic period. The result of this study might be vital for generating appropriate mental health crisis management guidelines at the hospital level and for the promotion of the psychosocial wellbeing of health care providers in response to the pandemic.

2. MATERIALS AND METHODS

2.1 Study Area

This study was conducted at Dilla university referral hospital, serving more than 100, 000 people coming from the southern and Oromia region, and currently, 15 health professionals working at the hospital were positive for the virus.

2.2 Study Period

This study was conducted from April 6-15, 2020.

2.3 Study Design

Hospital based cross-sectional study design was employed.

2.4 Eligibility Criteria

2.4.1 Inclusion criteria

All health professionals working at Dilla university referral hospital and age 18 and above were included.

2.4.2 Exclusion criteria

The exclusion criteria of this study were respondents who were not at the hospital during the data collection period and unable to fill the self-administered questioner.

2.5 Sample Size calculation

To calculate the sample size, we used the previously study done in china in the same epidemic which was

35.1% [10] and by using single proportion formula of cross sectional study design.

It was calculated by using a single proportion formula from the study done in china P= 0.54%

Where, n = required sample size n= Z (α/2) 2 pq / d2, p= 0.351

= (1.96) (1.96) (0.351) (0.649) / (0.05) (0.05) = 349

Where z is reliability coefficient at 95% confidence interval (1.96)
W (margin of error) =0.05

Since the population was less than 10,000, correction formula was used

n= n/1+ (n-1)/N
n= 349/1+ (349-1)/2000 = 297
N non-response rate 10% = 29
The total sample size was, 297+ 29 = 326

2.6 Sampling Procedure

Consecutive sampling technique was used mean that all health professionals who were working at the hospital during the data collection period were included until the required number samples were collected.

2.7 Generalized Anxiety Disorder

The first part of the questioner was GAD-7 (Generalized Anxiety Disorder-7) scale to assess subject's anxiety symptoms. The GAD-7 has been previously used in Ethiopia studies [11]. Seven items assess the frequency of anxiety symptoms over the past two weeks on a 4-point Liker-scale ranging from 0 (never) to 3 (nearly every day) ranged from 0 to 21 and score greater 9 score defined as had general anxiety disorder [12].

Current knowledge, attitude and practice about the coronavirus (KAP) – it was assessed by a 12 item questioner adopted from the world health organization COVID-19 training manual [13].

2.8 Data Collection Procedures

All questionnaires translated into the Amharic language before data collection. The English version was translated and back-translation by another native fluent both in English and in the local language.

Supervisors and data collectors were trained for Two days on the aims of the study, format questionnaire,

the value of privacy and confidentiality of the respondents, then self-administered questioner was distributed to each respondent and collected by checking the completeness of each questioner at the daily base.

2.9 Data Processing and Analysis

Data was entered into the Epi-Data 3.4 software package and exported to the Statistical Package for Social Science version 22. Descriptive statistics (frequencies and percentages) and cross-tabulation calculated to see the distribution of study variables among study participants. The Bivariate and multivariable logistic regression was conducted to determine the predictor variable of the outcome variable at p-value < 0.05, 95% confidence interval. Finally, the results of the study were summarized by frequency tables, graphs, and narrative descriptions.

3. RESULTS

Two-thirds of respondents were less than 35 years of age and single. Half of the respondents were nurses by profession, and more than one-third of them stay by focusing for more than 3 hours on COVID-19 information of country and world per day (Table 1).

Two-thirds of the respondents were reporting false/I don't know for the item "Not all persons with COVID-2019 will develop to severe cases. Only those who are elderly, have chronic illnesses, and are obese are more likely to be severe cases." And only one-third of the respondents were wearing masks for prevention during the day to day hospital activity (Table 2).

3.1 General Anxiety Disorder

From a total of 326, 131(40.2%) of them scored more than 9 out of 21 for GAD-7 items of measurement and considered as they had a generalized anxiety disorder. Nearly one-third of the respondents report as several days of " a feeling of afraid as something awful happens and nearly every problem of relaxing" (Fig. 1).

3.2 Factors Related Generalized Anxiety Disorder

During multiple logistic regression analysis variables that predict the outcome variable was being female, family size 3+, nursing by profession, and <3 year of working experience at 95% confidence interval, p< 0.05 (Table 3).

Table 1. Percentage of different Socio-demographic classes of workers on COVID-19 at dilla university referral hospital who manifested Generalized anxiety disorder, Dilla, Ethiopia, April, 2020 (N=326)

Variables	Category	Frequency	Percentage
Sex	Male	133	40.9%
	Female	193	60.1%
Age	Below 35	217	66.3%
	Above 35	109	33.6%
Educational status	Diploma	64	19.8%
	Bachelor	188	57.7%
	Masters	74	22.4%
Marital status	Single	217	66.8%
	Married	87	26.8%
	Others *	22	6.2%
Number of family size	1	144	44.3%
At home	2-3	98	30%
	>3	84	25.5%
	Doctors	40	12.2%
Area of profession	Anesthesia	16	4.9%
	Laboratory	26	8%
	Pharmacy	28	8.6%
	Psychiatry	15	4.9%
	Midwifes	25	7.8%
	Nurse	176	53.2%
Working unit	Out patient	85	26.3%
	Emergency	57	17.4%
	Ward	147	44.6%
	Intensive unit	37	11.4%
Hours of focus on	< 1hr	73	22.4%
COVID-19	1-2hr	127	38.9%
information/per day	>3hr	126	38.6%
Years of experience	< 3 year	156	48%
	3-6 year	79	24.2%
	>6year	91	27.6%

Others – Separated /Widowed/ Divorced*

4. DISCUSSION

This study aimed to assess was general anxiety disorder among health care professionals concerning the pandemic. According to this study result, 131 (40.2%) of them were developed generalized anxiety disorder in response to the new virus, and variables associated with the outcome variable were female, nursing in the profession, more family size, and less than three years of experience.

This study finding was higher than the study done in china 35.1% [10]. It might attributed to the difference in socio-demographic characteristics such as Literacy, Hospital setting, and resource for preventing transmission.

This study found that being female increases the chance of developing generalized anxiety disorder by 2.12 times (2.01-3.45) as compared to males, and this study was consistent with the study done in the united kingdom [14]. Females has low natural tolerance to cope with the new disastrous and challenging events such as pandemics.

This study found that respondents who have more than three family sizes at home 1.34 times (1.12-4.43) more likely to experience GAD than those who were living alone in the home and this finding was similar to the studies done in India [15]. The fear of exposing many family members in the home after contracting the virus in the hospital results in fear, stress and anxiety.

Table 2. Percentage of workers on COVID-19 who have knowledge of important factors the disease at dilla university referral hospital, Dilla, Ethiopia April, 2020 (N=326)

	Knowledge	True	False/ Don't know
1	The main clinical symptoms of COVID-19 are fever, fatigue, dry cough, and myalgia	326(100%)	0(0%)
2	Unlike the common cold, stuffy nose, runny nose, and sneezing are less common in persons infected with the COVID-19 virus.	277(85%)	49(15%)
3	There currently is no effective cure for COVID-2019, but early symptomatic and supportive treatment can help most patients recover from the infection.	296(91%)	29(9%)
4	Not all persons with COVID-2019 will develop to severe cases. Only those who are elderly, have chronic illnesses, and are obese are more likely to be severe cases.	114(35%)	212(65%)
5	Eating or contacting wild animals would result in the infection by the COVID-19 virus.	156(48%)	169(52%)
6	Persons with COVID-2019 cannot infect the virus to others when a fever is not present	84(26%)	241(74%)
7	The COVID-19 virus spreads via respiratory droplets of infected individuals	326(100%)	0(0%)
8	Ordinary residents can wear general medical masks to prevent the infection by the COVID-19 virus	326(100%)	0(0%)
9	It is not necessary for children and young adults to take measures to prevent the infection by the COVID-19 virus	82(25%)	244(75%)
10	To prevent the infection by COVID-19, individuals should avoid going to crowded places such as train stations and Avoid taking public transportations.	326(100%)	0(0%)
11	Isolation and treatment of people who are infected with the COVID-19 virus are effective ways to reduce the spread of the virus.	326(100%)	0(0%)
12	People who have contact with someone infected with the COVID-19 virus should be immediately isolated in a proper place. In general, the observation period is 14 days	319(98%)	7(2%)
	Attitude	**Agree**	**I don't know / disagree**
13	Do you agree that COVID-19 will finally be successfully controlled?	238(73%)	88(27%)
14	Do you have confidence that Ethiopia can win the battle against the COVID-19 virus	150(46%)	176(54%)
15	Practice	Yes	No
16	In recent days, have you gone to any crowded place?	241 (74%)	84(27%)
17	In recent days, have you worn a mask when leaving home?	211(65%)	114(35%)

Table 3. Multi-variable logistic regression result Generalized anxiety disorder, Dilla university referral hospital, Dilla, Ethiopia, April, 2020 (N=326)

Variables	Category of variables	COR (Crude odds ratio)	AOR (Adjusted odds ratio)
Sex	Male	1	
	Female	2.22 (1.45-3.12)*	2.12 (2.01-3.45)*
Age	Below 35	1	
	Above 35	1.65 (0.57 -2.90)*	
Marital status	Single	1	
	Married	0.67 (0.07-1.23)	
	Others *	0.841 (0.65-1.77)	

Variables	Category of variables	COR (Crude odds ratio)	AOR (Adjusted odds ratio)
Educational status	Diploma	1	
	Bachelor	0.12(0.10 -1.78)	
	Masters	0.98 (0.79-1.46)	
Number of Family size	One	1	
	Two	0.33(0.12-1.55)	
	Three and above	1.65(1.09-2.80)**	1.34(1.12-4.43)**
Area of profession	Nurses	2.12 (2.03-3.98)**	2.11(1.45- 3.81)**
	Other**	1	
Working unit	Out patient	1.29 (1.11 -2.29)	1.14(0.03-2.81)
	Emergency	2.45(1.73-3.79)	2.20(0.93-3.94)
	Intensive unit	1.22(0.54-1.97)	1
	In-patient	1	
Hours of focus on COVID-19 information/per day	< 1hr	0.23 (0.11-0.94)	0.14(0.12-1.73)
	1-2hr	0.18(0.09-0.68)	0.13(0.02 -1.47)
	>3hr	1	
Years of experience	<3year	1	
	3-6year	0.32(0.29-0.74)*	0.30(0.28-0.82)*
	>6year	0.38(0.12-0.65)*	0.32(0.16-0.79)*

Others – Separated /Widowed/ Divorced, Others ** - (Doctors /Anestatist/ Laboratory / Pharmacy/ Psychiatry/ Midwifes), 1=Reference, for COR, * p < 0.25, and for AOR, *= p< =0.05 and, ** p < 0.01***
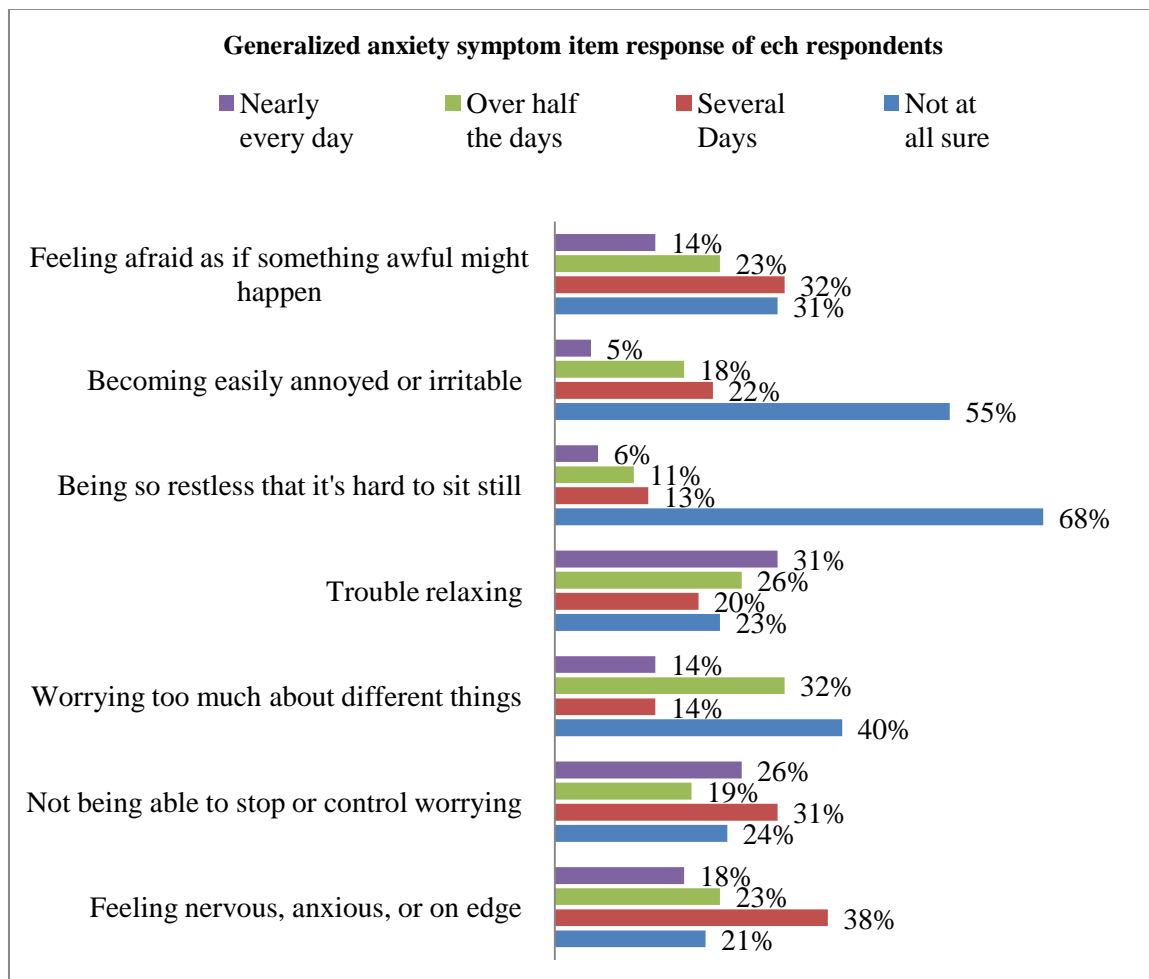

Fig. 1. GAD-7 item responses of works on COVID-19 at Dilla university referral hospital, April, 2020 (N=326)

Anxiety symptoms were highly associated with the nursing profession and increase the chance of GAD by 2.11 times (1.45- 3.81) as compared to another discipline of health professionals and supported by the study united kingdom [14]. The frequent and close contact nature of the profession with a patient with the limited resource of prevention material to protect self and others might result in anxiety symptoms.

Another variable related to General anxiety disorder was year experience. Those who had > 6 years of working experience at hospital lowers the chance of experiencing anxiety symptoms by 0.32 times (0.16-0.79) as compared to those who work less three years at the hospital. This study finding was supported by the study done in Egypt [16]. The knowledge difference about the pandemic in handling different severe and new cases in their professional life with good psychological reactions, and they're coping might be advance than fresh health professionals.

5. LIMITATION OF THE STUDY

Since the study was cross-sectional design, no conclusions can be drawn regarding causality and alternative explanations of the findings and cannot be ruled out.

6. CONCLUSION

More than one-third of the respondents were experiencing general anxiety Disorder in a relationship. Female gender, nurse, > 3 family size, < 3 years working experience as predictors of the outcome variable. It indicates that there should be immediate and continuous mental health support for health professionals working at the hospital for a better outcome and quality health service for customers of the hospital and also for the implementation of a country COVID-19 prevention program of a global epidemic.

Mental health professionals should give continuous emotional and psychological support for health professionals working at the hospital through different Media, and there should be brief training for health professionals on how to cope with the psychological impact of COVID-19 for better health care.

ETHICAL APPROVAL AND CONSENT

The Dilla university ethical review board has given the ethical clearance to conduct this study. The written consent was obtained from the study participants. The confidentiality of the information was ensured with all respondents who participated in the study.

AVAILABILITY OF DATA AND MATERIALS

The datasets analyzed for this study is available from the corresponding author on reasonable request.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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