



Prevalence and Associated Factors of Anxiety Symptoms among Front-Line Health Care Workers in Tigray Region Quarantine and Treatment Centers, Southern Ethiopia 2020: Cross-Sectional Study

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ABSTRACT

Background: Corona Virus Disease (COVID-19) has caused universal psychological impact around the globe. Healthcare workers are among the many groups of people who are in the frontline and facing a risk of direct exposure to the virus. The purpose of the study was to assess anxiety symptoms and associated factors among health care workers managing COVID-19 in Tigray region quarantine and treatment centers.

Materials and methods: A cross-sectional study was conducted on 155 study participants in Tigray region quarantine and treatment centers from June 2020 to September 2020. Data were collected using online survey. Binary logistic regression analysis was conducted to identify factors that affect anxiety symptoms. Statistical significance was declared using a p-value < 0.05 and 95% of Confidence Interval (CI) for an Adjusted Odds Ratio (AOR).

Results: The study found that the prevalence rate of anxiety symptoms among health care workers was 23.9%. This study also indicated that being gender AOR 2.310:95% CI (1.301-4.641), history of anxiety AOR 0.008:95% CI (0.000-0.144), institutional support AOR 3.244:95% CI (1.930-5.438) were significant predictors of anxiety symptoms among health care workers.

Conclusion: The prevalence of anxiety symptoms among HCWs in Tigray region during the pandemic is comparable with other countries.

Keywords: COVID-19; Anxiety; Healthcare workers; Pandemic

INTRODUCTION

Coronaviruses are non-segmented, enveloped, positive-sense, single-strand RNA viruses. Among all coronaviruses six species cause human disease. Most coronavirus species that cause human disease resulted mild respiratory disease; but

nevertheless, lethal corona virus species have started to arise in the last decades, such as Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV) in 2002 and the middle east respiratory syndrome coronavirus in 2012 [1].

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In December 2019, a highly infectious serious acute respiratory syndrome caused by a novel coronavirus (SARS-CoV-2) emerged in Wuhan, China. On March 11th 2020, the World Health Organization (WHO) declared COVID-19 a pandemic. In general, COVID-19 is an acute fatal disease that may end up with death due to progressive respiratory complications. In addition to the physical impacts, COVID-19 can have serious effects on people's mental health.

The drastic increasing of the pandemic around the globe has put under pressure health care workers as they are fighting the virus front line. This in turn impacts the psychological state of the healthcare professionals.

According to previous studies, during the outbreaks of Severe Acute Respiratory Syndrome (SARS) and the Middle East Respiratory Syndrome (MERS), frontline medical staff had reported anxiety symptoms of corona virus disease. Previous studies have also indicated that factors such as gender, lack of personal protective equipment's, being away from family and history of anxiety were known to predict anxiety symptoms among health care workers during the Corona Virus Disease (COVID-19) pandemic [2].

Currently, Tigray region (Southern Ethiopia) is facing the most critical phase of the pandemic, the virus is already in the community. Healthcare professionals are confronting the virus and are prone to psychological impacts. So, the aim of this study is to assess the prevalence and associated factors of anxiety symptoms among health care workers managing COVID-19 in Tigray region quarantine and treatment centers.

The second pandemic of the twenty-first century, according to the WHO, is COVID-19. The virus can cause a variety of symptoms, ranging from asymptomatic to fatal acute respiratory distress syndrome. An extraordinary calamity and a major threat, the COVID-19 pandemic. This highly contagious illness has spread like wildfire around the world, causing strife, mistrust and inequality as well as escalating trade disputes between countries. The pandemic spread fast throughout Africa and killed millions of people, including Healthcare Workers (HCWs), due to a lack of human resources, Personal Protective Equipment (PPE) and inadequate health systems. The COVID-19 poses a severe threat to countries in sub-Saharan Africa because of its destructive effects, which include poverty, weaker health systems and sociocultural effects on both patients and HCWs [3].

The COVID-19 pandemic resulted in a significant loss of life worldwide and has had an impact on every nation's mental health and social conditions. Due to their hard workloads, frequent life-or-death choices and elevated infection risk, healthcare workers are at a greater risk of acquiring mental health issues. This study sought to determine the prevalence of COVID-19-related stress and anxiety among healthcare workers in southern Ethiopia as well as the factors that contribute to these conditions.

Healthcare staff play a direct role in the prevention, diagnosis, treatment and care of COVID-19 patients who are at high risk of developing anxiety. The increasing number of confirmed

and suspected cases, high workload, depletion of personal protective equipment, lack of specific drugs, increased risk of infection for families and colleagues, feelings of being inadequately supported and inability to adhere to prevention strategies may all contribute to the HCWs' mental burden. Healthcare personnel perceive a higher risk of anxiety due to their exposure to the sickest patients, which adds to their stress. This problem may be exacerbated in nations with underinvested health sectors as a result of their extreme poverty. Ethiopia is primarily responsible for sharing this burden with other sub-Saharan African countries [4].

Following the COVID-19 pandemic, the general public and healthcare workers may be saved from anxiety caused by reduced autonomy and issues like income, job, security and safety if outbreak prevention and control measures like quarantining, closing and suspending transportation, avoiding public gatherings and even forgoing different important public and family events.

Untreated anxiety may have long-term health impacts on healthcare professionals and impair their ability to carry out their duties, such as controlling the COVID-19 outbreak. Additionally, it can put a strain on the weak and under-resourced health sector by raising the cost of care and reducing available labour.

MATERIALS AND METHODS

Study Area and Period

The study was conducted in Mekelle city quarantine centers from June to October 2020.

Study Design

A cross sectional study was conducted.

Data Collection Tool and Technique

In the study, we used the electronic questionnaire star questionnaire as the survey tool and information was collected through friend circle forwarding and telegram groups. Questionnaire star is a professional online survey platform, which can be used for questionnaire surveys, evaluation, voting and other purposes. Compared with traditional survey methods, questionnaire star has the obvious advantages of being fast, low cost, easy to learn and easy to use [5].

The questionnaire of the study has three sections. The first section contained questions on demographic characteristics of the study participants. Anxiety was assessed in the second section of the questionnaire by using standard questionnaire (Zung self-rating anxiety scale). The third section of the questionnaire includes questions to assess factors that affect nurse's anxiety. We used 50 as cut point as used in other study [6].

Data Processing and Analysis

The collected data were edited, checked visually for its completeness and the response was coded, entered and cleaned by Epi-Info version 7 for windows and exported to SPSS version 23.0 for statistical analysis. Descriptive statistics was computed and the results were summarized and presented by tables and charts. Percentage, frequency and mean were calculated [7]. Binary logistic regression was used to determine the magnitude, direction and strength of association between a set of independent variables and the outcome variable at $p < 0.25$ significance level. Then those variables significant at $p < 0.25$ with the outcome variable were selected for multivariate analysis. And odds ratio with 95% confidence level was computed and p -value < 0.05 will be describe as a significant association. Hosmer-Lemeshow test will be used to check fitness model [8].

Table 1: Secio demogrpahic characteristics health care workers in Tigrai region quarantine and treatment centers, Southern Ethiopia (N=155).

Variable	Category	Frequency n (%)
Gender	Female	44 (28)
	Male	111 (72)
Age	>33 year	49 (32)
	≤ 33 year	106 (68)
Marital status	Married	91 (59)
	Single	48 (31)
	Divorce	16 (10)
Profession	Doctor	29 (19)
	Nurse	53 (34)
	Others	73 (47)
Year of experience	>10 year	29 (19)
	≤ 10 year	126 (81)
History of anxiety	No	103 (66)
	Yes	52 (34)
Family history of anxiety	No	128 (83)
	Yes	27 (17)

Psychological Characteristics

The result revealed that majority, 116 (74.84%) of the study participants were concerned about the spread of the Coronavirus Disease (COVID-19). Likewise, majority of the study participants, 102 (88.7%) were satisfied with the institutional support. In addition, this result indicated that

RESULTS

Secio-demographic Characteristics

We received 155 qualified questionnaires from the online survey with the recovery rate of 100%. The mean age of the study participants was 32.8 ± 4.8 years. Among the study participants majority of them were male, 111 (71.6%). Likewise, majority, 126 (81.3%) of the study participants had less than or equal to 10 years' experience. Moreover, more than half, 91 (58.71%) of the study participants were married (**Table 1**) [9].

more than half of the study participants, 81 (52.23%) were engaged at online entertainment in their spare time (**Table 2**) [10].

Table 2: Psychological characteristics of study participants (N=155).

Variable	Category	Frequency n (%)
Satisfied with the presence of personal equipment's	No	61 (39)

	Yes	94 (61)
Satisfied with institutional support	No	53 (34)
	Yes	102 (66)
Concern about the spread	No	39 (25)
	Yes	116 (75)
Leisure activities	Online entertainment	80 (52)
	Talking with friends	40 (26)
	Nothing	35 (22)

Factors Associated with Anxiety Symptoms

The multiple logistic regression model output indicated that gender, history of anxiety and institutional supports were significantly associated with the outcome variable. Female were 2 times more likely to have anxiety symptoms than their counter parts (AOR: 2.310, 95% CI (1.301-4.989)). Health workers who hadn't history of anxiety were 99.2% less likely

to have anxiety symptoms than those who had anxiety symptoms before (AOR: 0.008, 95% CI (0.000-0.144)). Those who were satisfied with institutional support were 3 times more likely to become non-anxious than unsatisfied ones (AOR: 3.244, 95% CI (1.930-5.438)) (Table 3) [11].

Table 3: Factors associated with anxiety symptoms.

Variable	Category	Anxiety		P-value	COR	AOR (CI)
		Yes	No			
Gender	Female	15	29	-	-	2.310 (1.301-4.989)
	Male	22	89	0.021	2.092	
Age	>33 year	7	42	-	-	-
	≤ 33 year	30	76	0.321	0.422	
Marital status	Married	23	68	-	-	-
	Single	8	40	0.212	1.691	
	Divorce	6	10	0.089	0.563	
Profession	Doctor	5	24	-	-	-
	Nurse	13	40	0.314	0.641	
	Others	19	54	0.243	0.592	
Year of experience	>10 year	5	24	-	-	-
	≤ 10 year	32	94	0.071	0.612	
History of anxiety	No	20	83	-	-	0.008 (0.000-0.144)
	Yes	17	35	0.001	0.496	
Family history of anxiety	No	30	98	-	-	-
	Yes	7	20	-	0.875	
Satisfied with the presence of personal equipment's	No	20	41	-	-	-
	Yes	17	77	0.13	2.209	

Satisfied with institutional support	No	18	35	-	-	3.244 (1.930-5.438)
	Yes	19	83	0.002	2.245	
Concern about the spread	No	9	30	-	-	-
	Yes	28	88	0.325	0.943	
Leisure activities	Online entertainment	19	61	-	-	-
	Talking with friends	10	30	0.082	0.934	
	Nothing	8	27	0.21	1.051	

DISCUSSION

This cross-sectional study found that the prevalence of anxiety symptoms among HCWs managing COVID-19 was found to be 23.9% 95% CI (18.7-29.7). This finding is lower than reported from other studies in Nepal and China. Likewise, Swapnil et al., have reported that the prevalence rates of anxiety among health care workers was reported 14.18% as assessed using the 28-item general health questionnaire. However, it is higher than findings reported in India and other part of China [12].

The difference might be due to disparity in the incidence of the pandemic, measures towards the virus, sociodemographic and economic differences. On the other hand, the finding of the present study is in line with previous study conducted in Wuhan, China, the epicenter of the virus outbreak in which the prevalence of the anxiety symptoms among health care workers was found to be 24.1% [13].

The present study revealed that gender, history of anxiety and institutional support status were significantly associated with anxiety symptoms. Female were approximately two times more likely to have anxiety symptoms than their counter parts. This finding is similar to the findings of previous studies [14].

CONCLUSION

The current study indicated that health care professionals who had history of anxiety were more likely to develop anxiety symptoms. The finding is congruent with the finding of the study conducted to assess the prevalence and influencing factors of anxiety and depression symptoms in the first-line medical staff fighting against COVID-19 in Gansu, China. Moreover, the present finding of the present study suggested that health care workers who were satisfied by the provided support from their institutions were less likely to develop anxiety symptoms. This similar with the study conducted in Hong Cong, China during the SARS crisis. The prevalence of anxiety symptoms among HCWs in Tigray region during the pandemic is comparable with other countries. It also indicated that gender, history of anxiety and intuitional support were predictors of anxiety symptoms among HCWs.

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