Prevenance of depression due to COVID-19 amongst medical students attending Napata College, Sudan in 2021

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Abstract

Background: The COVID-19 pandemic has created a mental health crisis among medical students in Sudan due to lockdown restrictions, overwhelming numbers of COVID-19 cases, financial difficulty, etc. This mental health crisis may have led to high degrees of depression among medical students. ***Methods:*** This cross-sectional institutional-based study was conducted at Napata College-Sudan during period September 2020 to September 2021 by using a questionnaire. The questionnaire included a sociodemographic questionnaire and psychometric Depression scales evaluating the psychological Depression impacts of the COVID-19 pandemic. Thus, both qualitative and quantitative analyses were performed in the study. ***Results:*** A total of 174 medical students participated in this study, of whom 66% were females. After assessment of the psychometric Depression scales, it was found that more than half of our participants were found to have depression due to COVID 19 pandemic with different scales ranging from mild depression (38%) to severe (5%) using Beck's test. Among the identified risk factors were having a family member who was infected with COVID-19. ***Conclusions:*** This research concludes that there is high incidence depression symptoms rate of COVID-19 among medical students

Keywords: COVID-19; Napata College; Depression; Medical Students

Introduction

In December 2019, a new strain of Coronavirus affected China and drastically spread around the world in an unprecedented manner, within a remarkable short period. The World Health Organization (WHO) eventually named it Coronavirus disease 2019 (COVID-19), which is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and declared a state of pandemic on March 11th, 2020 (1). Since then, the pandemic appeared across the globe. In Sudan, this resulted in a nation-wide state of emergency (1,2). Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration (3–5). COVID-19 is transmitted primarily via contact with infectious material (such as respiratory droplets), and is characterized especially by fever, cough, shortness of breath, pneumonia, and respiratory failure. The COVID-19 pandemic has triggered a global health crisis and was a major public health emergency of international concern (PHEIC), which not only threatens the lives of people but also affects their mental health (6). During the pandemic, some people have experienced relatively higher emotional irregularities (e.g., panic, excessive anxiety, irritability, and other psychological reactions) while some people suffered from cognitive imbalances; as a result, their attention and memory may be influenced by repeated stimulation of a large amount of information. Some of them may have changed their behaviors considerably whilesome have expressed somatic reactions, such as insomnia, stomach pain, and diarrhea (6–11). Physiological and psychological responses are normal reactions in dealing with public health emergencies, which are conducive to adapting to the environment. However, overreactions can increase the psychological burden and be hazardous to physical and mental health (12,13). Published data is indicative of COVID-19 posing a negative effect on the mental health of college students (14).

Objectives:

General Objective: To assess Depression due to COVID 19 pandemic among Medical Students in Napata College

Specific Objectives:

  i) To describe general characteristic of participants such as socio-demographic factors (age, gender and year of study)
  ii) To identify relevant factor such as Participants who have history of COVID 19, Participants who have Family/friends with history COVID 19, Participants who have history of mental illness, Participants who have Family with history of mental illness and others
  iii) To measure depression rate using beck test (scale for depression)
  iv) To assess possible association between depression and other factor like (age, gender and year of study).

COVID-19

Severe acute respiratory infection (SARS) is a group of respiratory tract infections caused by a beta coronavirus (SARS-COV2) (1,15,16). Since it has been declared a global pandemic by theWorld Health Organization (WHO), it has made the rapid spread across the world and causes significant mortality and morbidity, some of which appear to be continuous far beyond the initial infection (2,17). Exposure to the virus does not guarantee the manifestation of symptoms immediately or ever (18).

Effects of COVID-19 on mental health

The psychological consequences of COVID-19 have been reported to include depressed mood, anxiety, poor sleep, and increased stress level (19). The COVID-19 pandemic, with its rapid spread and high mortality, constitutesa unique case of an acute, largescale, and uncontrollable stressor. It is well-established that stress can have a significant effect on individuals psychological wellbeing, particularly when the individual cannot cope with the stress (20).

Coping has beendefined as "constantly changing cognitive and behavioral efforts to manage specific external and/orinternal demands that are appraised as taxing or exceeding the resources of the person" (21), which is

one of the determinants in how individuals would react to major stressors such as the pandemic. Accumulating evidence has suggested that mindful coping effectively reduces stress and anxiety in college students (22).

High stress and anxiety risk prevalence were observed in students prior to the pandemic (23).

Students are also at greater risk of depression than the general population (24). Lee (25)

designed a coronavirus anxiety scale (CAS). Upon testing, it was seen that Asians had a

relatively higher CAS score than other races.

Research Methodology

Study design: This was an observational, descriptive cross sectional institutional-based study

Study area (setting): This study was conducted among medical students attending Napata College, in Khartoum- Sudan between September 2020 and September 2021. The total population was 174 students. Simple random sampling methods were utilized.

Inclusion criteria: All medical students at Napata College

Exclusion criteria: Post graduate student, students who refuse to participate were excluded from this study.

Study Variables:

➢ Dependent variables: Presence of depression symptoms

➢ Independent variables: sociodemographic data: age, gender, education level (number of year in college). Presence of family history of mental illness (mental status).

Data Collection:

Data related to socio-demographic factors and other related factors was collected using self- administrated paper form questionnaire. The questionnaire was initially prepared in English and translate into the local language, Arabic. Questionnaire was divided into two sections: a) sociodemographic characterization of participants and factor related COVID-19, and b) Assessment of depression.

Tools for Measuring Depression

We measured Depression by using self-reported measure designed Questionnaire utilizing Beck test for initial diagnosis. Score of 0 to 7 = normal, 8- 17 mild depression, 18 to 22= moderate depression, 23-60 severe depression 37 and above = very severe depression.

Ethical Clearance: The research was conducted after obtaining ethical clearance from research committee in community medicine department, Napata College

Results

174 medical students were approached to participate in the study, with response rate of 100 %

the questionnaire was answered exhaustively. The majority of study population were females

(66%).

The age of the participants categorized in three groups as follows: 18-21years, 22-25 years, and

26 years and above. Majority of participants in age group 18-21 years 57 %. Most of the

participants were residing with their families 59%. About 71% of the participants had stable

monthly income either from their families or by themselves (Table 1).

Table 1 Distribution **of** Socio-demographic characteristics of medical student

Categories		Frequency (percentage)
Gender	Male	59 (34%)
	Female	115 (66%)
Age (years)	18-21	99(57%)
	22-25	74(42.5%)
	26 and above	1(0.6%)
Study year	1st	47(27%)
	2nd	23(13%)
	3rd	34(20%)
	4th	40(23%)
	Final	29 (17%)
Residence	With family	102(59%)
	Dorms	72 (41%)
Family income	Steady	123 (71%)
	Non Steady	51(29%)

Depression amongst our participants

More than half medical students who participated in this study were found to have depression due to COVID19. Figure 1 illustrates the data.
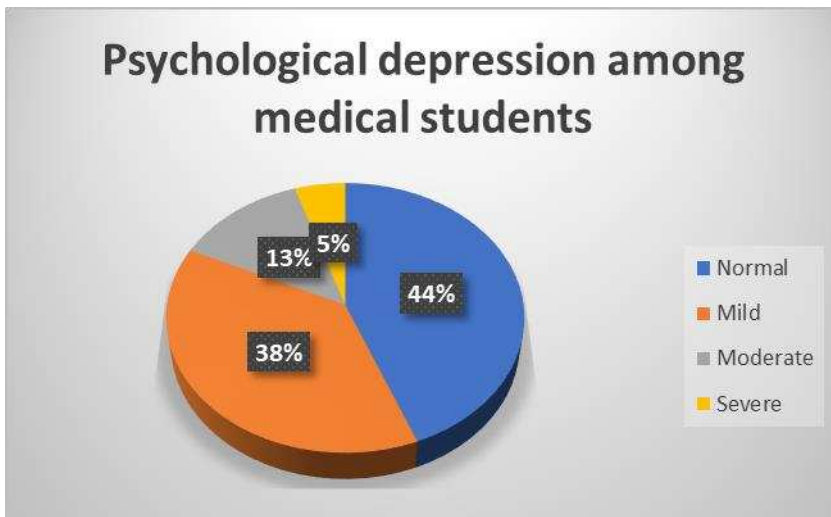
Figure 1: Psychological depression among medical students

Association between Depression and Socio-demographic characteristics of medical students

When comparing depression subscales between demographics characteristics groups, the potentialrelationship between depression and demographics characteristics was evaluated using the Pearson's Chi-square test. The result of the test showed Depression was significantly associated with Study year (p value 0.04), and insignificantly associated with Gender, Age, Residence and Family income (p value 0.94, 0.61, 0.73 and 0.84 respectively) (Table 2).

Table 2: Association between depression and Socio-demographic characteristics of medical student

Categories		Normal	Mild	Moderate	Severe	P value
Gender	M	25	15	12	7	0.94
	F	57	51	5	2	
Age (years)	18-21	37	42	15	5	0.61
	22-25	44	24	2	4	
	26+	1	0	0	0	
Study year	1st	23	24	0	0	0.04
	2nd	13	10	0	0	

		Normal	Mild	Moderate	Severe	P value
	3rd	21	11	2	1	
	4th	17	12	9	2	
	final	9	9	5	6	
Residence	With family	56	43	0	3	0.73
	Dorms	26	23	17	6	
Family income	Steady	64	51	4	4	0.84
	Non Steady	18	15	13	5	

When comparing depression subscales between factors related of COVID 19, depression was significantly associated with participants who have family/friends with history COVID 19 (p value 0.02). Sources of COVID updates (namely, social media) were found to have a negative effect on medical students (p value 0.04) and were insignificantly associated with other factors (Table 3).

Table 3: Association between depression and factor related of COVID 19

Categories		Normal	Mild	Moderate	Severe	P value
Participants who have history of COVID 19	No	43	15	15	7	0.39
	Yes	39	51	2	2	
Participants who have Family/friends with history COVID 19	No	8	4	13	5	0.02
	Yes	74	62	4	4	
Participants who have history of mental illness	No	82	65	15	4	0.32
	Yes	0	1	2	5	
Participants who have Family with history of mental illness	No	73	60	14	6	0.79
	Yes	9	6	3	3	
Participants who have Family member/members working in the medical field	No	71	29	1	2	0.1
	Yes	11	37	16	7	
Participants who have Family member/friend contacted with COVID	No	72	29	4	3	0.81
	Yes	10	37	13	6	

19 cases						
Source of COVID updates	Social media	34	43	1 3	5	0.04
	TV and radio	7	0	0	2	
	Both (Social media and TV and radio)	38	21	3	2	
	Not follow updates	3	2	1	0	

Discussion

Medical students are particularly vulnerable to mental health concerns as a result of burden of their academic life and their job description requirements which increase their vulnerability to depression.

174 medical students were approached to participate in this study and we found more than half medical students carried in this study were found to have depression due to COVID 19 pandemic with different scales ranging from mild depression 38% of the study participants to sever 5%. Our findings were similar to recent study done conducted by Shah and colleagues (26). A survey conducted by Aftab and colleagues (27) among undergraduate and postgraduate students studying medicine worldwide found a prevalence of depression of 41.5% in these students, which is lower than that found this study. In contrast to our results, a Saudi study reported nearly 60% of participants not suffering from depressive symptoms(28).

Conclusion:

In conclusion:

➢ High percentage of depression due to COVID 19 pandemic among medical students with different scales ranging from mild depression to sever according to Beck test.

➢ Significant association of depression due to COVID 19 pandemic with study year (p value 0.04) among medical students and insignificant association with other socio-demographic characteristics of medical students (p value >0.05 at all).

➢ Significant association of depression due to COVID 19 pandemic with Participants who have Family/friends with history COVID 19 (p value 0.02) and Source of COVID updates (p value 0.04) among medical students and

insignificant association with factor related of COVID 19 (p value >0.05 at all).

Recommendations

➢ To reduce depression caused by the COVID-19 pandemic, medical students should beencouraged to pursue healthier lifestyles during the pandemic.

➢ We also recommend developing and implementing various policies at the government levelto reduce the effects of the COVID-19 pandemic on mental health.

➢ To raise awareness about depression importance of mental health during COVID-19pandemic.

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