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Assessment General Anxiety Disorder among University Students during the COVID-19 Pandemic in Sudan

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Abstract

Introduction: COVID-19 disease and its preventive measures are likely to increase anxiety levels among individuals.

Methodology: A cross-sectional study conducted among Sudanese university students in August 2020. Generalized anxiety disorder scale (GAD-7) was used to assess the anxiety level through an online questionnaire. We used a simple random sampling technique, sample size was 664, and the collected responses an 847 with 98.7 response rate. The data analyzed by Statistical Package for the Social Science (SPSS) version 20.

Result: Among the participants, 558 (65.8%) were female, Female: Male ratio 1 :1.9 ,569 (67.2%) were living in urban areas and 682 (80.4) were worrying about the academic delay. Minimal, mild, moderate and severe anxiety were reported by 307 (35.8%), 350 (40.8%), 118 (13.8%) and 72 (8.4%) of the respondents, respectively. There was powerful statistically significant association between the variables and anxiety levels (p=.000).

Conclusion: The study was one of the earliest studies to explore the anxiety levels and association factors on students in the initial stage of COVID_19 in Sudan. Furthermore, the findings can be used at the government and university levels to build strategies that will reduce anxiety among university students in a similar pandemic in the future.

Keywords: General anxiety; COVID-19; Sudan; University students.

Introduction

Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus. COVID-19 started in December 2019 and spread through Wuhan which is the capital of Hubei province in China [1]. Symptoms of coronavirus appear between 2-14 days after exposure to the virus include fever, dry cough, shortness of breath, fatigue, headache, loss of taste or smell, sore throat, runny nose, nausea or vomiting, and diarrhea [2]. Although many activities stopped in most countries and many individual movements were barred due to quarantine, local hospitals received thousands of patients who had COVID-19 and forced to perform emergency protocols [3]. Due to quarantine coronavirus can affect on the psychological health of college students like fear, anxiety, depression, stress, and others. We did this research to show the anxiety level of university students during the COVID-19 pandemic in Sudan because literature about this topic is rare. In January 14, 2022, confirmed cases of coronavirus around the world reach

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321,551,039 Cases, while the total death number was about 5,541,842. Whereas in Sudan confirmed cases got 61,853 point, while the total death number was 4,898 [4]. Currently, the SARS-CoV-2 has been spread around the world as the Omicron variant. This variant is high mutated virus and fixed as a variant of concern by the WHO. WHO is cagey that the Omicron variant of SARS-CoV-2 held the high risk of infection, reigniting anxieties about the economy's recovery from two-year pandemic [5].

Material and Subjects

Study area, design, population

Facility -based cross- sectional study was conducted to assess the GAD anxiety level among university students during initial stage of the COVID-19 pandemic in Sudan. The inclusion criteria included Sudanese university students.

Sample size calculation & sampling technique

The calculated sample size was 664 using the Cochran formula, ($n = Z^2pq/d^2$)

n= minimum sample size

Z2=Standard score corresponding to a given confidence level ((99))

P=50(No recording system for number of university student in Sudan and No previous study for prevalence of anxiety in Sudan))

q=1_p=1_50

d=proportion of sampling error which is usually 1% confidence limit. It was increased up to 858 for better results, and easy generalization of results. Participants were informed about study objectives, and given a choice to participate in this study. Out of 858 participants, 847 agreed to participate in this study, with a 98.6% response rate. Non-probability convinces the sample technique was used to select the participant.

Data collection

As per the Sudanese Government guidelines to the public for reducing physical communication and home isolation, we used an online self-administered questionnaire hosted in (https://docs.google.com/forms/d/1VSzWOEq0CT3PI_I6PkdFgijn40wsuWaCODsg5YNmERI/edit) distributed through social media (WhatsApp, Telegram, Facebook) to measure anxiety level by using the generalized Anxiety Disorder Scale (GAD-7) [6] and factors that influencing it . Data collected between 29 September - 28 October 2020. The dependent variable was anxiety level among university students during the first wave of the COVID-19 pandemic. Whereas the independent variables were gender, place of residence, social distance and quarantine, family income stability, and academic activity delay.

Statistical analysis

The data analyzed using the Statistical Package for Social Science (SPSS) version 20 after being firstly diagnosed by Google form. Descriptive statistics (frequencies and percentages), used to summarize data and to clarify the demographic and other selected characteristics of students. First, sum scores for the GAD-7 and then the demographic data, quarantine, and delay in academic activities compared to GAD-7using Chi-square ($\chi 2$) test.

P-value < 0.01 was considered statistically significant.

Results

In the sample, most the participants were female, 558 (65.8%), while males were 289 (34.2%). Female: Male was 1.9:1 Participants who lived in urban areas were 569 (67.2%) and 278 (32.8%) lived in rural areas. 760 (89.7%) of the students had stable family income and 87 (10.3%) of the students had no steady family income. 681(80.4%) of the students expressed their worry about delay in academic activities, and 166 (19.6%) of the students did not, as shown in Table 1.

Among the participants, mild anxiety was the commonest in 350 (40.8%) followed by minimal anxiety in 307 (35.8%), while moderate and severe anxiety were among 118 (13.8%) and 72 (8.4%) of participants, respectively. There was

Table 1: Demographics characteristics, of the study participants

Variables	N	%
Gender		
Male	289	34.2
Female	558	65.80%
Residence		
Urban	569	67.2
Rural	278	32.8
Stable family income		
Yes	760	89.7
No	87	10.3
Feeling lonely due to quarantine and distance from friends.		
Yes	517	60.3
No	330	39.7
The psychologically negative impact of delay in academic activities		
Yes	672	79.3
No	175	20.7

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powerful statistically significant association between anxiety levels and gender, place, family income stability, social quarantine and distance from friends, and delay in academic activities (p =0.00).

The anxiety level score in females were higher than in males. The participants who lived in urban areas had anxiety level scores higher than participants who lived in rural areas (p=0.00). Students who had unstable family incomes reported higher anxiety levels than those who had a stable income. Anxiety level score was higher in social quarantine & if more distant from friends (p=0.00). The delay in academic activity is related to a higher level of anxiety score (Table 2).

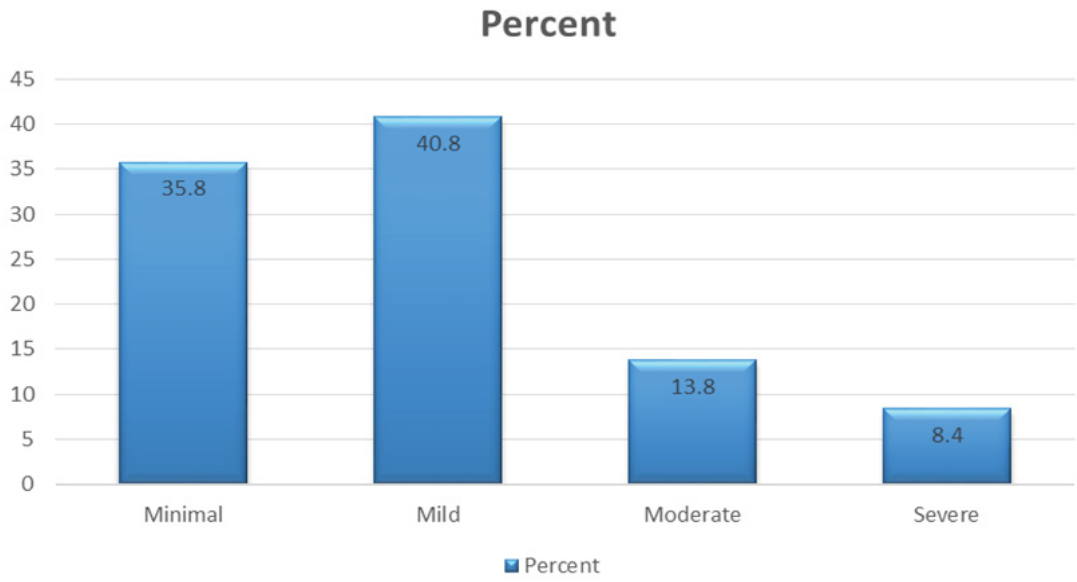

Figure 1: Explain the anxiety levels of participants according to GAD-7

Table 2: Cross table between demographical characteristics and different level of GAD

Variables	Minimal	Mild	Moderate	Severe	*P*. value
Gender					
Male	114 (39.4%)	108 (73.4)	41 (14.2)	26 (9)	<0.001
Female	193 (34.6)	242 (43.4)	77 (13.8)	46 (8.2)	
Residence					
Urban	187 (32.9%)	252 (44.3%)	86 (15.1%)	44 (7.7%)	<0.001
Rural	120 (43.2%)	98 (35.3%)	32 (11.5%)	28 (10.1%)	
Stable family income					
Yes	283 (37.2%)	318 (41.8%)	104 (13.7%)	55 (7.2%)	<0.001
No	24 (27.6%)	32 (36.8%)	14 (16.1%)	17 (19.5%)	
Feeling lonely due to quarantine and distance from friends.					
Yes	133 (25.7%)	229 (44.3%)	97 (18.8%)	58 (11.2%)	<0.001
No	174 (52.7%)	121 (36.7%)	21 (6.4%)	14 (4.2%)	
The psychologically negative impact of delay in academic activities					
Yes	174 (52.7%)	121(36.7%)	21(6.4%)	14 (4.2%)	<0.001
No	113 (68.1%)	43 (25.9%)	8 (4.8%)	2 (1.2)	

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Discussion

There have been many life-threatening epidemics that swept the world, but the uproar created by the corona epidemic is considered the strongest over the previous centuries; this may be due to the vagal source, poor knowledge about the mode of transmission, the prognosis of the disease, lifestyle change, educational defect, social isolation, and rapid spread of this infection; which negatively affected the psychological impact on the general public and students, especially in terms of fear of the future and anxiety about academic achievement [7,8,9,6]. This study is one of the few and earliest studies to assess anxiety levels and factors that influence it during the COVID_19 pandemic among Sudanese university students [2]. Regarding the results showed that about 35.8% of participants perceived a minimum level of anxiety, with mild anxiety being the most common in 40.8% of participants, moderate about 13.8%, and severe anxiety seen only in 8.4%; This result is similar to the study conducted in the United Arab Emirates during COVID_19 pandemic where 52.3% of the participants showed minimum anxiety with 11.9% of them having severe anxiety [6]. It is also similar to another study conducted in Sudan to assess the psychological effect of the COVID-19 pandemic on Health Professionals in which most participants had mild anxiety and extreme anxiety (16.7%); (Correct this sentence!!!) the increased in severe anxiety level may be due to the direct contact with COVID_19 patients among health workers than university students. By comparison of demographic characteristics and the GAD_7 scale, we found women were most likely to get anxiety than men, which is harmonious with the already known topics in previous studies, which showed that female university students report more anxiety than male students [10-12]. The study revealed that more than half of the participants (60.3%) feel lonely due to social isolation and distance from friends and university environment, and this had strong association with an increased level of anxiety. The finding is similar to a study done by Zhou et al.yu which showed reduced access to friends with loneliness increasing mental issues like anxiety [13]. This result is also similar to a study conducted in Germany with increased loneliness due to restrictions but with no relation to anxiety level [14].

Additionally, students who live in urban areas were more likely to experience anxiety. This finding differs from the study conducted in Saudi Arabia among university students which showed the level of anxiety was equal (26.2% in rural students and 27.8% in urban students) [15]. This finding is in contrast with the study done on Chinese Adolescents during the outbreak of COVID-19, which showed the percent of anxiety was 40.4% in rural participants and 32.5% in urban participants [10]. Most of the participants had a steady family income of 760 (89.7%). The study suggested that family income stability influenced anxiety levels. Students with stable family income reported lower levels of anxiety compared with those who had unstable income. Powerful statistically significant association between family income stability and anxiety levels noted in the finding (p=.000). Different from this study, the previous study in Sudan indicated that there was no significant association between family income and anxiety levels [16]. Also, in another Sudanese study among medical students, family income stability did not affect psychological health [17]. The result is consistent with a Brazilian study that showed reduced or ceased family income during the COVID-19 pandemic was a predictor variable of anxiety symptoms [18]. Similarly, another study in France showed that participants who lost their income had a higher risk of accounting for at least one mental health problem in comparison with those who did not [19]. In an Indian study among universities students, academic delays were positively associated with anxiety symptoms [20]. This is in line with the finding that revealed that there was a powerful statistically significant association between academic delays and anxiety levels. The study showed that participants who expressed their feeling of worry regarding academic delays had clearly higher levels of anxiety compared with those who did not show any concern about academic delays. Academic delays resulted from the shutting of universities on the unpredictable dates, with online education performed by only a few universities, unlike other countries. Finally, another Sudanese study conducted among medical students showed that students whose universities opened their doors during lockdown had higher anxiety scores [17].

Conclusion

The study is one of the earliest studies to explore the anxiety level and association factors on university students in the initial stage of COVID-19. Most of the participants found to be suffering from anxiety, and we found a strong association between factors like socio-demographic characteristics, quarantine, and delay in academic activities with anxiety levels. The result can be used at the government and university level to build strategies that will reduce anxiety among university students in a similarly pandemics in the future.

Recommendations

We recommend future studies to assess the efficacy of online education that performed in some universities during the pandemic period, and its association with anxiety levels among students. Similarly, studies to explore whether direct or indirect exposure to the COVID-19 virus has an impact on psychological health. Additionally, the psychological effect of the COVID-19 pandemic among Sudanese university students (stress, anxiety, and depression levels) needs to be addressed.

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Strength and limitations of the study

This cross-sectional study assesses factors those influence college student's anxiety during the pandemics. It is essential to know the impact of the pandemic period on the mental health of university students in Sudan.

This study has several limitations. Some people thought the corona virus is a disgrace. The questionnaire was online, so people who did not have internet or had weak internet could not fill out this questionnaire. The questionnaire was self-reporting which can cause some bias, with no clinical diagnosis. The study did not include lower educational levels.

Ethical considerations

An ethical clearance was taken from the ministry of health, Northern State, Sudan (NO-10/2023), and all respondents were asked for their consent before participation in the study. Personal information was deidentified prior to the data analysis.

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Conflict of interest

The authors declare no conflict of interest.

References

1. Cielo F, Ulberg R, and Di Giacomo D. The psychological impact of the covid- 19 outbreak on mental health outcomes among youth: A rapid narrative review. International Journal of Environmental Research and Public Health 18 (2021): 6067.
2. Arafa A, Mohamed A, Saleh L, et al. Psychological impacts of the COVID-19 pandemic on the public in Egypt. Community mental health Journal 57 (2021): 64-69.
3. Irfan M, Shahudin F, Hooper VJ, et al. The psychological impact of coronavirus on university students and its socio-economic determinants in Malaysia. INQUIRY: The Journal of Health Care Organization, Provision, and Financing 58 (2021): 00469580211056217.
4. https://ar. m. Wikipedia .org.
5. Araf Y, Akter F, Tang YD, et al. Omicron variant of SARS-CoV-2: Genomics, transmissibility, and responses to current COVID-19 vaccines. Journal of medical virology 94 (2022): 1825-1832.
6. Saddik B, Hussein A, Sharif-Askari FS, et al. Increased levels of anxiety among medical and non-medical university students during the COVID-19 pandemic in the United Arab Emirates. Risk management and healthcare policy 13 (2020): 2395.
7. Rakhmanov O, and Dane S. Knowledge and anxiety levels of African university students against COVID-19 during the pandemic outbreak by an online survey. Journal of Research in Medical and Dental Science 8 (2020): 53-56.
8. Khoshaim HB, Al-Sukayt A, Chinna K, et al. Anxiety level of University students during COVID-19 in Saudi Arabia. Frontiers in Psychiatry 11 (220): 1397.
9. Elamin MM, Hamza SB, Abdalla YA, et al. The Psychological Impact of the COVID-19 Pandemic on health professionals in Sudan 2020. Sudan Journal of Medical Sciences 15 (2020): 54-70.
10. Zhou SJ, Zhang LG, Wang LL, et al. Prevalence and socio-demographic correlates of psychological health problems in Chinese adolescents during the outbreak of COVID-19. European child & adolescent psychiatry 29 (2020): 749-758.
11. Wang C, Pan R, Wan X, et al. Immediate Psychological Responses 463 and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. International journal of environmental research and public health 17 (2020).
12. Putwain DW Test anxiety in UK schoolchildren: prevalence and demographic patterns. Br J Educ Psychol 77 (2007): 579-593.
13. Zhou X, Snoswell CL, Harding LE, et al. The role of telehealth in reducing the mental health burden from COVID- 19. Telemed. E-health (2020).
14. Benke C, Autenrieth LK, Asselmann E, et al. Lockdown, quarantine measures, and social distancing: Associations with depression, anxiety and distress at the beginning of the COVID-19 pandemic among adults from Germany. Psychiatry research 293 (2020): 113462.
15. Mohammed Z, Arafa A, Atlam ES, et al. Psychological problems among the university students in Saudi Arabia during the COVID-19 pandemic. International Journal of Clinical Practice 75 (2021): 14853.
16. Abas IMY, Alejail IIEM, and Ali SM. Anxiety among the Sudanese university students during the initial stage of COVID-19 pandemic. Heliyon 7 (2021): 06300.
17. Omer ME, Shareef A, Ala'A AL, et al. Psychological impact of COVID-19 pandemic on medical students in Sudan, 2020. Journal of the Neurological Sciences 429 (2021).

Makawi Mohamed MH, et al., J Anal Tech Res 2024
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18. Lopes AR, and Nihei OK. Depression, anxiety and stress symptoms in Brazilian university students during the COVID-19 pandemic: Predictors and association with life satisfaction, psychological well-being and coping strategies. PLoS one 16 (2021): e0258493.

19. Wathelet M, Duhem S, Vaiva G, et al. Factors associated with mental health disorders among university students in France confined during the COVID-19 pandemic. JAMA network open 3 (2020): e2025591-e2025591.

20. Biswas S and Biswas A. Anxiety level among students of different college and universities in India during lock down in connection to the COVID-19 pandemic. Journal of Public Health (2021).

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