Literature Review
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Prevalence and severity of homestay followed depression, anxiety, and stress during pandemics of covid-19 among college students in Addis Ababa, Ethiopia, 2020. A cross sectional survey

Abstract

Background: Coronaviruses are enveloped, positive, single-stranded large RNA viruses that infect various animals including humans which were first investigated by Tyrell and Bynoe in 1966. In Ethiopia, more than 26 million students were affected by school closures due to coronavirus surge.

Objectives: The survey was aimed at assessing the homestay followed prevalence of depression, anxiety, and stress during the pandemic of COVID-19 among college students in Addis Ababa, Ethiopia, 2020.

Methods: An online cross-sectional survey was conducted among 153 college students in Addis Ababa, Ethiopia, from April 07-May 07, 2020. A short version of Depression, Anxiety, and Stress (DAS 21) scale were used, to measure both the magnitude as well as their severity.

Findings: The overall prevalence of homestay followed depression was 51 %(95%CI: 42.8-59.1%), of which 49%, 18.1%, 20.9%, 7.2%, and 4.6% of participants had normal, mild, moderate, severe and extremely severe depression consecutively. The overall prevalence of anxiety was 51.6 %(95%CI: 43.4-59.8%), where 11%, 20.9%, 6.5%, and 13.1% of the participants had mild, moderate, severe, and extremely severe anxiety symptoms respectively. The magnitude of stress was 11.1 %(95%CI: 6.6-17.2%) of which only 7.8% and 2.6% had mild and moderate stress symptoms. The odds of developing anxiety among the students with a family income of 2001-4999 birr and greater than 10,000 birr had 69.7%(AOR:0.303; 95%CI:0.102-0.901) and 79.5%(AOR:0.205, 95%CI: 0.064-0.653) higher odds as those with a monthly income of less than 2000 birr.

Conclusion: A higher prevalence of depression and anxiety was observed from the current study, whilst the level of stress is still higher. A higher monthly income was associated with the development of anxiety during the pandemic of COVID-19. Concerned bodies were recommended to work over the identified problems, besides; large scale study mainly focused on determinants of depression, anxiety, and stress was also emphasized.

Keywords: prevalence, depression, anxiety, stress, COVID-19, college students

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Abbreviations: AOR, adjusted odds ratio; COR, crude odds ratio; DAS, depression, anxiety, stress; WHO, world health organization

Introduction

Coronaviruses are enveloped, positive, single-stranded large RNA viruses that infect various animals including humans which were first investigated by Tyrell and Bynoe in 1966.[1] During January 2020, novel coronavirus was confirmed by World Health Organization (WHO) to cause respiratory illness in a cluster of people in Wuhan city, Hubei province, china,[2] whereas the case fatality rate of Covid-19 was much lower than SARS of 2003.[3,4]

The epidemic brought not the only risk of death, but also insufferable psychological pressure on people around the world.[5,6] There were reports of the psychological impacts of the epidemic on older adults, medical staff, children, patients, and the public in general. However, no study on the level of depression, anxiety, and stress among college students in Ethiopia has been investigated to date.[7,9]

The first coronavirus case; a Japanese citizen; in Ethiopia was reported as of March 13, 2020.[10] According to the estimation by United Economic Commission for Africa, 2.9 percentage points off of Ethiopia's economic growth for the fiscal year of 2020, was shaved of Covid-19.[11]

In Ethiopia, where more than 26 million students affected by school closures due to the coronavirus surge,[11] the continuous spread of the epidemic, the fabrication of inconsistent news, and delays in starting colleges, schools, and universities are predictable to influence the mental health of college students.

Therefore, the current study was aimed at assessing the homestay related prevalence and severities of depression, anxiety, and stress during the pandemic of COVID-19 among college students in Addis Ababa, Ethiopia.

Methods

An online cross-sectional survey was undertaken April 10, to May 07, 2020, among students at Universal Medical and Business

College; one of the private Colleges in Addis Ababa; the capital city of Ethiopia. The college has been providing a teaching-learning program in three departments namely; Public Health Officer, Nursing, and Clinical Pharmacy. A total of 1630 students totally, of which 1259 attended the regular program. The source population was students who attended the college in the academic year of 2020 and the study population for the study was students who enrolled in the regular program. The students with severe medical conditions were excluded from the study. Due to the lockdown condition in Ethiopia, the students were approached through WhatsApp, Telegram, Messenger, and email. A total of 890 students were identified to use either of the communication applications. An online data collection tool was designed and executed by Google forms (docs.google/forms). The Google link to the questionnaire was sent to the identified participants through email, WhatsApp, and Telegram in groups and individually.

For measuring the outcome variables in this case; depression, anxiety, and stress; a short version of Depression, Anxiety, and Stress (DAS 21) scale was used, with some clarification made by the investigator for those who sustained confusion to understanding the constructs within the questionnaire. Constructs making up the outcome could first be computed then multiplied by two to measure the magnitude and their severities.[12] Accordingly, the magnitude for all three of the outcomes was measured as present and absent, whilst for the severity, the following ranges were applied. For depression, normal (0-9), mild (10-13), moderate (14-20), severe (21-27), and extremely severe (28 and above). For anxiety, normal (0-7), mild (8-9), moderate (10-14), severe (15-19), and extremely severe (20and above). For the stress; normal (0-14), mild (15-18), moderate (19-25), severe (26-33), and extremely severe (34 and more).

The collected data were entered into SPSS 25.0, after looked for completeness, cleaned, and recoded, descriptive statistics as a summary for the finding and tables and diagrams were used for presenting the finding.

Results

Socio-demographic characteristics

A total of 153 filled questionnaires returned from the distributed online survey. Forty-nine (32%), 53(34.6%), and 9(5.9%) of female participants had depression, anxiety, and stress respectively. Participants in the age group of 22-24 years old took the larger proportion of 36(23.5%), 36(23.5), and 12(7.8) of depression, anxiety, and stress consecutively. Depression, and anxiety mostly observed among single participants at a rate of 73(47.8%) and 74(48.4%), whilst all in all in case of stress. Fifty-eight (37.9%) and 61(39.9%) of participants who live with their parents sustained depression and anxiety respectively.

Homestay followed depression, anxiety and stress-related characteristics

Sixty-four (41.8%) of participants never found feeling of hard to wind down and 62(405%) of participants found it hard to wind down at the rate of sometimes. Sixty-seven (43.8%), 87(56.9%), 106(69.3%), and 74(48.4%) of participants were never aware of dryness of their mouth, they couldn't seem to experience any positive feeling at all, experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion), and found it difficult to work up the initiative to do things respectively.

Whereas 62(40.5%) of the participants felt that they were using a lot of nervous energy, 61(39.9%), were intolerant of anything that kept them from getting on with what they were doing, and 57(37.3%) felt difficult to relax all at a rate of sometimes.

Magnitude and severity of homestay related depression, anxiety, and stress

Regarding the severity of depression, 49%, 18.1%, 20.9%, 7.2%, and 4.6% of participants had normal, mild, moderate, severe, and extremely severe depression consecutively.

Eleven percent, 20.9%, 6.5%, and 13.1% of the participants had mild, moderate, severe, and extremely severe anxiety symptoms respectively, whereas only 7.8% and 2.6% had mild and moderate stress symptoms.

The overall prevalence of depression, anxiety with its predictors, and stress

The overall prevalence of homestay followed depression, Anxiety, and Stress was observed at 51 %(95%CI: 42.8-59.1%), 51.6 %(95%CI: 43.4-59.8%), and 11.1 %(95%CI: 6.6-17.2%) respectively.

Monthly family income was statistically associated with anxiety symptoms during the pandemics of Covid-19. The odds of developing anxiety among the students with a family income of 2001-4999 birr and greater than 10,000 birr had 69.7%(AOR:0.303; 95%CI:0.102-0.901) and 79.5%(AOR:0.205, 95%CI: 0.064-0.653) higher odds as those with a monthly income of less than 2000 birr.

Discussion

The overall prevalence of depression in this study was found at 51%, which was consistent with the findings in Addis Ababa, where the prevalence of depression among medical students was observed at 51.3%.[13] Which was higher than the level of depression in Jimma Southwestern Ethiopia 26.8%,[14] in Mizan Aman College, of Southern Ethiopia 34.1%,[15] in Debre Berhan Central Ethiopia 19.7%,[16] in Kerala, India 26.9%,[17] in Malaysia 30% & 36.4%,[18,19] and 43.7% in Kenya.[20]

The prevalence of depression in this study was lower than the finding of the study undertaken among medical students at Fayoum University, Egypt, which was found at 60.8%.[21]

The prevalence of depression in this study was almost consistent with the findings in Nigeria where the prevalence was observed at 58.2%, of which 37.0%, 15.7%, 3.9%, and 1.6% of participants had mild, moderate, severe and extremely severe depression respectively,[22] Bhubaneswar, Odisha, India 51.3%,[23] and Vietnam 52.3%.[24]

The prevalence of anxiety in this study was found at 51.6% of which 11%, 20.9%, 6.5%, and 13.1% of the participants had mild, moderate, severe and extremely severe anxiety symptoms respectively, which was lower than the finding in Bhubaneswar, Odisha, India where the prevalence was observed at 66.9%[23] and higher than the finding from a college students in Debre Berhan, Central Ethiopia 23.6%,[16] in Addis Ababa 30.1%,[13] in Kenya 12.9%[20] and 64.3% in Egypt.[21]

In this study, 11.1% of the respondents had stress symptoms with only 7.8% and 2.6% of which had mild and moderate stress symptoms. Which was higher than the finding from Debre Berhan, Central Ethiopia 4.1%(16), and lower than the findings at Bhubaneswar, Odisha, India 53%(23), and 62.4% in Egypt.[21]

A study in the southern region of Ethiopia among college students revealed on the severity of depression that 26.83%, 6.71%, and 0.61% of the respondents had mild, moderate and severe depression

respectively,[15] whereas, in this study, 49%, 18.1%, 20.9%, 7.2% and 4.6% of participants had normal, mild, moderate, severe and extremely severe depression consecutively.

In this study, only family monthly income was associated with anxiety among college students. Students from a higher family monthly income were at an increased risk of developing anxiety. But which were missed in this study, the variables such as being a female being female (AOR 2.56, 95% CI (1.32, 4.95)), first-year educational level (AOR 12.06, 95% CI (2.18, 66.72)), second-year educational level (AOR 8.99, 95% CI (1.67, 48.45)) and those who had poor social support (AOR 5.36, 95% CI (2.08, 13.76)) were significantly associated with anxiety.[13]

Conclusion

A higher prevalence of homestay followed depression, and anxiety was observed in the current study. The stress level was also relatively higher. A higher family monthly income was statistically associated with the anxiety status of the students during the pandemic of COVID-19.

Limitation of the study

As this was an online survey, the sample size was low with a higher non-response rate. Common variables were not incorporated within the study, which results in the deficiency of undertaking factor identification. Associated factors for the stress and depression were not investigated due to sample size issues and the online nature of the study.

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Author's contribution

Addisu Tadesse Sahile involved in designing of the study, data analysis, drafting and critically reviewing the manuscript. Mikiyas Ababu designed the online template, involved in data analysis, and review of the manuscript. Sinetsehay Alemayehu, Haymanot Abebe, Getabalew Endazenew, Mussie Wubshet, Hana Getachew and Tirhas Tadesse took part in designing of the study, and reviewing the final draft. All authors read and approved the final manuscript.

Competing interests

The authors declare that they have no competing interests.

Availability of data and materials

A finding of this study was generated from data collected and analyzed on the basis of stated methods and materials hence all data were already available in the manuscript.

Consent for publication

Consent for publication of the manuscript was not applicable due to the fact that there were no participant's individual data videos or images.

Ethics approval and consent to participate

The study protocol was performed in accordance with the ethical principle. Ethical approval was obtained from ethics review board of Universal Medical and Business College. The ethics approval was given in accordance with the Declaration of Helsinki.

Data Sharing Statement

A finding of this study was generated from the data collected and analyzed on the basis of stated methods and materials hence all data were already available in the manuscript.

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