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Depression, anxiety, and stress in residents of a neglected population in the district of San Juan de Lurigancho

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ABSTRACT

The global situation is causing a crisis in the mental health of the population in general as a result of the coronavirus pandemic, and the person in situations of crisis or change, present responses of anxiety, stress, and depression due to the moments of risk that are being faced as a result of the pandemic. Therefore, its research objective is to determine depression, anxiety, and stress in residents of a neglected population in San Juan de Lurigancho. It is a quantitative, descriptive, cross-sectional study, with a total population of 480 participants from the district of San Juan de Lurigancho, who responded to a sociodemographic data questionnaire and the Depression, Anxiety, and Stress Scale (DASS-21). In the results, we observe the correlation between the main variable depression with the variables of sociodemographic aspects in the study, it can be evidenced that there is an existing relationship between the main variable depression, and the variables of the sociodemographic aspects since its score is ($p < 0.005$). In conclusion, professional help for young people should be taken into account, promoting prevention programs, coping skills, and mental health about the pandemic and what decisions to make in this current situation.

1. Introduction

Globally, in the face of the growing threat from the new variants of the coronavirus (COVID-19), it has been reported at the public health level that the general population has increased rates of depression, anxiety, and stress (Amu et al., 2021). So, the infection rates for the new variant are increasing and this increases different psycho-emotional signs in each of the people (Alnazly et al., 2021; Li et al., 2021a).

It should be noted that the new variant of COVID-19 called "OMICRÓN," at the national and international level, constitutes one of the variants that is potentially infecting the entire general population (Poudel et al., 2022), from children to the elderly. This causes family members to worry about their infected family member (Lopes and Nihei, 2021), and at a psycho-emotional level, it generates frustration, sadness, depression, and anxiety, since this compromises people's mental health (Woon et al., 2021).

These psycho-emotional factors are not only generated by the pandemic of the new variant this year (Li et al., 2021b), but also the general population thinks that the same restrictions will be applied again when the pandemic just started in 2020. It promotes a negative result in the population (Barutcus et al., 2021) since they began to remake or organize their lifestyle, but, due to the new variant, can generate conflict in it, affecting both their psychological and physical well-being (Boluarte et al., 2021; Brailovskaia et al., 2021).

Therefore, the impact generated by COVID-19 from 2020 to the present will be one of the greatest emotional burdens that people will have (GebreEyesus et al., 2021; Islam et al., 2020), since, tolerating restriction and isolation measures, it will make the person's mental health more vulnerable, since their emotional state is not fully recovered (Devi et al., 2021).

In a study carried out in India, with 147 participants, the results showed that 33.33% of the participants presented depression, 37.4% anxiety, and 19.72% presented stress, and the sex that presented greater depression, anxiety and stress was female (Prakash et al., 2021).

In another study carried out in Turkey, with 363 participants who worked in the health sector, in

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their results they interpreted that 71.9% of the participants presented stress, 40.8% presented anxiety and 55.9% presented depression and in the female sex was the one who presented these symptoms with 45.6% than in the male sex 33.6% (İlhan and Küpeli, 2022).

In another study conducted in Germany, with 2548 study participants who were university students, the results interpreted that 35.9% of students had moderate to severe depression, 27.7% of students had moderate to severe anxiety and 25.1% of the students presented a high level of stress and the female sex was the one that presented the most symptoms of these factors, increasing the risk of mental health problems (Karing, 2021).

In another study in Ecuador, with 626 study participants who are from the general population, the results showed that 17.7% of the participants had a moderate to severe level of depression, 30.7% a level of anxiety moderate to severe and 14.2% were experiencing stress, were being female, being of a younger age, being a student, and having a family member infected with COVID-19 increases rates of depression, anxiety, and stress (Mautong et al., 2021).

Therefore, the objective of the study is to determine depression, anxiety, and stress in residents of a neglected population in San Juan de Lurigancho.

2. Material and methods

The present study, due to its properties, is quantitative research, in terms of its methodological aspect, it is descriptive, non-experimental, and cross-sectional (Hernández-Sampieri et al., 2015). The study included 480 study participants from the ages of 18 to 59 years old who are residents of the district of San Juan de Lurigancho (Table 1). In this study, the inclusion criteria are as follows:

- Inhabitants that cover the age of 18 years to 59 years old
- Residents of the district of San Juan de Lurigancho
- Residents who voluntarily agree to participate in the study

The technique for the study was carried out using the DASS-21 questionnaire or data collection instrument, which aims to measure depression, anxiety, and stress in residents of a neglected population in San Juan de Lurigancho.

The Depression, Anxiety, and Stress Scale (DASS-21), each of the three DASS scales contain 14 items, divided into subscales of 2 to 5 items with similar content. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-loathing, lack of interest or participation, anhedonia, and inertia. The Anxiety Scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and the subjective experience of anxious affect. The stress scale is sensitive to levels of nonspecific chronic arousal. Evaluates the difficulty to relax, nervous excitement and annoyance, agitation or irritation, over-reactivity, and impatience. It consists of 4 response alternatives, 0 "not at all," 1 "sometimes," 2 "a good part of the time" and 3 "most of the time" that serve to rate the degree to which they have experienced each state during last week (ARC, 2022).

The sample adequacy measure to obtain the validation of the instrument through the Kaiser-Mayer-Olkin test obtained a coefficient of 0.892 (KMO>0.8) and the Bartlett Sphericity Test obtained significant results (Approx. X^2=7767.328; df=210; Sig=0.000).

Finally, the internal consistency coefficient Cronbach's Alpha was 0.942 (α>0.8; N of elements=21), so it is determined that the instrument has a high degree of reliability.

The questionnaire that was carried out for the measurement of depression, anxiety and stress in the inhabitants, was carried out in a vulnerable area of the district of San Juan de Lurigancho. For this, each member or head of the family was coordinated to obtain the corresponding permits for the investigation, and explaining about the study so that they obtain the necessary knowledge of what is going to be carried out.

Table 1: Sociodemographic characteristics of residents in a neglected population of San Juan de Lurigancho

Characteristics	n=480
Gender	
Female	306 (63.7)
Male	174 (36.3)
Age	
Mean±D.T.	34.27 ±10.243
Young [18 to 29 years old]	190 (39.6)
Adult [30 to 59 years old]	290 (60.4)
Civil status	
Single	204 (42.5)
Married	99 (20.6)
Cohabitant	133 (27.7)
Widower	44 (9.2)
Degree of instruction	
Without instruction	9 (1.9)
Complete primary	20 (4.2)
Incomplete primary	13 (2.7)
Completed high school	278 (57.9)
Incomplete high school	39 (8.1)
Completed university	84 (17.5)
Incomplete university	37 (7.7)
Occupation condition	
Have a stable job	169 (35.2)
Has a temporary job	178 (37.1)
Not working	133 (27.7)
Family type	
Nuclear	131 (27.3)
single parent	108 (22.5)
Extended	81 (16.9)
Expanded	45 (9.4)
Reconstituted	67 (14.0)
Family equivalent	9 (1.9)
Single person	39 (8.1)

3. Results

Table 2 shows the main variables, where in the depression variable, we can see that 191 participants have normal depression, 65 mild depression

participants, 130 moderate depression participants, 23 severe depression participants, and 71 extremely severe depression participants; in the anxiety variable, 116 participants presented normal anxiety, 109 mild anxiety participants, 127 moderate anxiety participants, 71 severe anxiety participants, and 57 extremely severe anxiety participants; and in the stress variable, we can observe that 282 participants present normal stress, 71 participants mild stress, 28 participants moderate stress, 33 participants severe stress, and 66 participants extremely severe stress.

In Table 3, we can observe the correlation between the main variable depression and the variables of sociodemographic aspects in the study, where it can be seen that there is a relationship between the main variable depression and the variables of sociodemographic aspects since their score it is evident that ($p<0.005$).

In Table 4, we can see the correlation between the main variable anxiety with the variables of sociodemographic aspects in the study, where it can be seen that there is a relationship between the main variable depression and the variables of sociodemographic aspects (age, marital status, degree of instruction, occupation condition and family type) since their score shows that ($p<0.005$) and in the sex variable of the sociodemographic aspects there is no existing relationship since their score is higher ($p=0.151$).

Table 2: Depression, anxiety, and stress in residents of a neglected population in San Juan de Lurigancho

Scale	n=480
Depression	
Mean±SD	6.85±5.085
Normal [0-4]	191 (39.8)
Mild [5-6]	65 (13.5)
Moderate [7-10]	130 (27.1)
Severe [11-13]	23 (4.8)
Extremely severe [14-21]	71 (14.8)
Anxiety	
Mean±SD	6.26±4.292
Normal [0-3]	116 (24.2)
Mild [4-5]	109 (22.7)
Moderate [6-7]	127 (26.5)
Severe [8-9]	71 (14.8)
Extremely severe [10-21]	57 (11.9)
Stress	
Mean±SD	8.24±5.229
Standard [0-7]	282 (58.8)
Mild [8-9]	71 (14.8)
Moderate [10-12]	28 (5.8)
Severe [13-16]	33 (6.9)
Extremely severe [17-21]	66 (13.8)

Table 3: Correlation between sociodemographic characteristics and the main variable depression of residents of a neglected population of San Juan de Lurigancho

	Depression level					Chi-square tests	
Characteristics	Normal	Mild	Moderate	Severe	Extremely severe	Val. X^2; gl	p
Gender							
Female	131 (42.8)	41 (13.4)	73 (23.9)	23 (7.5)	38 (12.4)	21.485; 4	.000
Male	60 (34.5)	24 (13.8)	57 (32.8)	0 (0.0)	33 (19.0)		
Age							
Young [18 to 29 years old]	87 (45.8)	30 (15.8)	52 (27.4)	6 (3.2)	15 (7.9)	15.891; 4	.003
Adult [30 to 59 years old]	104 (35.9)	35 (12.1)	78 (26.9)	17 (19.3)	56 (19.3)		
Civil status							
Single	126 (61.8)	25 (12.3)	37 (18.1)	7 (3.4)	9 (4.4)	107.31; 12	.000
Married	14 (14.1)	16 (16.2)	39 (39.4)	7 (7.1)	23 (23.2)		
Cohabitant	41 (30.8)	24 (18.0)	39 (29.3)	3 (2.3)	26 (19.5)		
Widower	10 (22.7)	0 (0.0)	15 (34.1)	6 (13.6)	13 (29.5)		
Degree of instruction							
Without Instruction	3 (33.3)	2 (22.2)	1 (11.1)	0 (0.0)	3 (33.3)	66.336; 24	.000
Complete Primary	5 (25.0)	0 (0.0)	9 (45.0)	3 (15.0)	3 (15.0)		
Incomplete Primary	2 (15.4)	4 (30.8)	2 (15.4)	0 (0.0)	5 (38.5)		
Completed High School	118 (42.4)	34 (12.2)	89 (32.0)	11 (4.0)	26 (9.4)		
Incomplete High School	10 (25.6)	9 (23.1)	8 (20.5)	0 (0.0)	12 (30.8)		
Completed University	33 (39.3)	15 (17.9)	16 (19.0)	4 (4.8)	16 (19.0)		
Incomplete University	20 (54.1)	1 (2.7)	5 (13.5)	5 (13.5)	6 (16.2)		
Occupation condition							
Have a stable job	85 (50.3)	17 (10.1)	38 (22.5)	11 (6.5)	18 (10.7)	25.443; 8	.001
Has a temporary job	53 (29.8)	30 (16.9)	62 (34.8)	4 (2.2)	29 (16.3)		
Not working	53 (39.8)	18 (13.5)	30 (22.6)	8 (6.0)	24 (18.0)		
Family type							
Nuclear	77 (58.8)	12 (9.2)	25 (19.1)	6 (4.6)	11 (8.4)	104.94; 24	.000
single parent	47 (43.5)	13 (12.0)	27 (25.0)	5 (4.6)	16 (14.8)		
Extended	32 (39.5)	11 (13.6)	25 (30.9)	2 (2.5)	11 (13.6)		
Expanded	14 (31.1)	4 (8.9)	16 (35.6)	6 (13.3)	5 (11.1)		
Reconstituted	6 (9.0)	9 (13.4)	24 (35.8)	1 (1.5)	27 (40.3)		
Family Equivalent	3 (33.3)	2 (22.2)	4 (44.4)	0 (0.0)	0 (0.0)		
Single person	12 (30.8)	14 (35.9)	9 (27.1)	3 (7.7)	1 (2.6)		

In Table 5, we can observe the correlation between the main variable stress with the variables of sociodemographic aspects in the study, where it can be seen that there is a relationship between the main variable depression and the variables of sociodemographic aspects (sex, age, marital status and type of family) since their score shows that ($p<0.005$) and in terms of the variables (level of education and employment status) of the sociodemographic aspects there is no existing relationship since ($p>0.005$).

Table 4: Correlation between sociodemographic characteristics and the main variable anxiety of residents of a neglected population of San Juan de Lurigancho

	Anxiety level					Chi-square tests	
Characteristics	Normal	Mild	Moderate	Severe	Extremely severe	Val. X^2; gl	p
Gender							
Female	84 (27.5)	69 (22.5)	77 (25.2)	39 (12.7)	37 (12.1)	6.736; 4	.151
Male	32 (18.4)	40 (23.0)	50 (28.7)	32 (18.4)	20 (11.5)		
Age							
Young [18 to 29 years old]	53 (27.9)	49 (25.8)	56 (29.5)	15 (7.9)	17 (8.9)	16.587; 4	.002
Adult [30 to 59 years old]	63 (21.7)	60 (20.7)	71 (24.5)	56 (19.3)	40 (13.8)		
Civil status							
Single	89 (43.6)	41 (20.1)	47 (23.0)	12 (5.9)	15 (7.4)	129.02; 12	.000
Married	9 (9.1)	16 (16.2)	30 (30.3)	20 (20.2)	24 (24.2)		
Cohabitant	17 (12.8)	35 (26.3)	43 (32.3)	20 (15.0)	18 (13.5)		
Widower	1 (2.3)	17 (38.6)	7 (15.9)	19 (43.2)	0 (0.0)		
Degree of instruction							
Without instruction	0 (0.0)	4 (44.4)	4 (44.4)	0 (0.0)	1 (11.1)	79.034; 24	.000
Complete primary	4 (20.0)	2 (10.0)	5 (25.0)	6 (30.0)	3 (15.0)		
Incomplete primary	2 (15.4)	2 (15.4)	3 (23.1)	4 (30.8)	2 (15.4)		
Completed high school	60 (21.6)	67 (24.1)	91 (32.7)	45 (16.2)	15 (5.4)		
Incomplete high school	5 (12.8)	10 (25.6)	8 (20.5)	3 (7.7)	13 (33.3)		
Completed university	27 (32.1)	21 (25.0)	12 (14.3)	8 (9.5)	16 (19.0)		
Incomplete university	18 (48.6)	3 (8.1)	4 (10.8)	5 (13.5)	7 (18.9)		
Occupation condition							
Have a stable job	53 (31.4)	39 (23.1)	39 (23.1)	18 (10.7)	20 (11.8)	27.994; 8	.000
Has a temporary job	33 (18.5)	38 (21.3)	44 (24.7)	30 (16.9)	33 (18.5)		
Not working	30 (22.6)	32 (24.1)	44 (33.1)	23 (17.3)	4 (3.0)		
Family type							
Nuclear	52 (39.7)	29 (22.1)	25 (19.1)	8 (6.1)	17 (13.0)	123.25; 24	.000
single parent	39 (36.1)	12 (11.1)	26 (24.1)	14 (13.0)	17 (15.7)		
Extended	12 (14.8)	28 (31.6)	21 (25.9)	11 (13.6)	9 (11.1)		
Expanded	6 (13.3)	6 (13.3)	14 (31.1)	14 (31.1)	5 (11.1)		
Reconstituted	2 (3.0)	8 (11.9)	34 (50.7)	16 (23.9)	7 (10.4)		
Family equivalent	0 (0.0)	5 (55.6)	2 (22.2)	2 (22.2)	0 (0.0)		
Single person	5 (12.8)	21 (53.8)	5 (12.8)	6 (15.4)	2 (5.1)		

Table 5: Correlation between sociodemographic characteristics and the main variable stress of residents of a neglected population of San Juan de Lurigancho

	Stress level					Chi-square tests	
Characteristics	Normal	Mild	Moderate	Severe	Extremely severe	Val. X^2; gl	p
Gender							
Female	174 (56.9)	50 (16.3)	27 (8.8)	19 (6.2)	36 (11.8)	17.783; 4	.001
Male	108 (62.1)	21 (12.1)	1 (0.6)	14 (8.0)	30 (17.2)		
Age							
Young [18 to 29 years old]	120 (63.2)	37 (19.5)	9 (4.7)	12 (6.3)	12 (6.3)	19.132; 4	.001
Adult [30 to 59 years old]	162 (55.9)	34 (11.7)	19 (6.6)	21 (7.2)	54 (18.6)		
Civil status							
Single	128 (62.7)	32 (15.7)	15 (7.4)	21 (10.3)	8 (3.9)	65.597; 12	.000
Married	55 (55.6)	5 (5.1)	10 (10.1)	6 (6.1)	23 (23.2)		
Cohabitant	83 (62.4)	20 (15.0)	3 (2.3)	5 (3.8)	22 (16.5)		
Widower	16 (36.4)	14 (31.8)	0 (0.0)	1 (2.3)	13 (29.5)		
Degree of instruction							
Without instruction	5 (55.6)	1 (11.1)	0 (0.0)	1 (11.1)	2 (22.2)	39.224; 24	.026
Complete primary	13 (65.0)	2 (10.0)	2 (10.0)	1 (5.0)	2 (10.0)		
Incomplete primary	6 (46.2)	0 (0.0)	0 (0.0)	2 (15.4)	5 (38.5)		
Completed high school	166 (59.7)	52 (18.7)	21 (7.6)	15 (5.4)	24 (8.6)		
Incomplete high school	20 (51.3)	5 (12.8)	2 (5.1)	2 (5.1)	10 (25.6)		
Completed university	51 (60.7)	6 (13.5)	1 (1.2)	9 (10.7)	17 (20.2)		
Incomplete university	21 (56.8)	5 (13.5)	2 (5.4)	3 (8.1)	6 (16.2)		
Occupation condition							
Have a stable job	101 (59.8)	23 (13.6)	9 (5.3)	19 (11.2)	17 (10.1)	14.642; 8	.066
Has a temporary job	98 (55.1)	30 (16.9)	11 (6.2)	12 (6.7)	27 (15.2)		
Not working	83 (62.4)	18 (13.5)	8 (6.0)	2 (1.5)	22 (16.5)		
Family type							
Nuclear	85 (64.9)	12 (9.2)	8 (6.1)	15 (11.5)	11 (8.4)	74.599; 24	.000
single parent	60 (55.6)	14 (13.0)	9 (8.3)	11 (10.2)	14 (13.0)		
Extended	46 (56.8)	17 (21.0)	6 (7.4)	1 (1.2)	11 (13.6)		
Expanded	28 (62.2)	7 (15.6)	3 (6.7)	2 (4.4)	5 (11.1)		
Reconstituted	26 (38.8)	15 (22.4)	0 (0.0)	1 (1.5)	25 (37.3)		
Family equivalent	9 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)		
Single person	28 (71.8)	6 (15.4)	2 (5.1)	3 (7.7)	0 (0.0)		

4. Discussions

In the present research work, it is understood from a point of view in the area of mental health and public health, in order to obtain accurate information to be able to promote strategies and develop skills in health professionals so that they can provide knowledge to people that they can maintain a proper lifestyle.

In the results regarding the main variables of depression, anxiety and stress, it is evident that the population has had a higher level of anxiety than the other variables, this is due to the fact that people, especially the younger ones, have not been given important and correct information about mental health care and this has generated, that most people have cases of somatization, where they unconsciously turn an emotional discomfort into a physical discomfort, believing that it is a condition generated by COVID-19, thus generating confusion in the population, believing that anxious symptoms such as headache, tiredness, and shortness of breath are symptoms related to COVID-19, so these factors can negatively affect the mental health of people, increasing the chances of suffering from other types of mental disorders. Amu et al. (2021) maintained that many of the mental problems such as depression, anxiety, and stress are conditions that during the pandemic have been increasing considerably, due to the fact that the population is the product of quarantine, isolation of the infected person, routine inactivity, sedentary lifestyle, insomnia, sadness, worry, and tiredness, are the factors that predispose the person to present pictures of depression, anxiety and stress and this is becoming more noticeable as a result of their mental vulnerability that is present.

It is important to keep in mind that as the pandemic decreases over time, many of the people who have been infected by COVID-19 have been the most likely to present symptoms of depression, anxiety and stress, since being isolated, quarantined and hospitalized, generates an impact at the level of their mental state of the person, where frustration, hopelessness, fear of dying, and the feeling that they are a burden for their family, generates many conflicts at the psycho-emotional level of the person, obtaining a risk of suffering from a mental disorder as a result of the disease, since the majority of people who have overcome COVID-19, present mental illnesses or disorders after overcoming the disease, where the presence of anxiety and changes of mood they are the most notorious in relation to how mild or moderate their COVID-19 infection is. In GebreEyesus et al. (2021), they maintain that multiple mental factors produce changes in the person, since being mentally vulnerable, stress, anxiety, depression, low self-esteem, and sleep disorders generate difficulties in the person to be able to return to their daily activities since having been infected with COVID-19, it has generated a negative impact at the psycho-emotional level in the short or long term depending on how the person wants to improve in order to have a stable quality of life.

5. Conclusion

In conclusion, professional help for young people should be taken into account, promoting prevention programs, coping skills, and mental health about the pandemic and what decisions to make in this current situation. It is concluded that early recognition should be made in the community of the mental health problems of each person originating within the pandemic period by COVID-19. This study will benefit additional research carried out on the subject since it will be able to increase interventions in mental health to mitigate the risks caused by the COVID-19 pandemic.

Compliance with ethical standards

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

References

Alnazly E, Khraisat OM, Al-Bashaireh AM, and Bryant CL (2021). Anxiety, depression, stress, fear and social support during COVID-19 pandemic among Jordanian healthcare workers. PLOS ONE, 16(3): e0247679. https://doi.org/10.1371/journal.pone.0247679 **PMid:33711026 PMCid:PMC7954309**

Amu H, Osei E, Kofie P, Owusu R, Bosoka SA, Konlan KD, and Gyapong JO (2021). Prevalence and predictors of depression, anxiety, and stress among adults in Ghana: A community-based cross-sectional study. PLOS ONE, 16(10): e0258105. https://doi.org/10.1371/journal.pone.0258105 **PMid:34624044 PMCid:PMC8500438**

ARC (2022). Depression anxiety stress scale (DASS-21). Addiction Research Center, University of Wisconsin–Madison, Madison, USA.

Barutcu Atas D, Aydin Sunbul E, Velioglu A, and Tuglular S (2021). The association between perceived stress with sleep quality, insomnia, anxiety and depression in kidney transplant recipients during COVID-19 pandemic. PLOS ONE, 16(3): e0248117. https://doi.org/10.1371/journal.pone.0248117 **PMid:33684159 PMCid:PMC7939354**

Boluarte-Carbajal A, Navarro-Flores A, and Villarreal-Zegarra D (2021). Explanatory model of perceived stress in the general population: A cross-sectional study in Peru during the COVID-19 context. Frontiers in Psychology, 12: 673945. https://doi.org/10.3389/fpsyg.2021.673945 **PMid:34248770 PMCid:PMC8264254**

Brailovskaia J, Truskauskaite-Kuneviciene I, Margraf J, and Kazlauskas E (2021). Coronavirus (COVID-19) outbreak: Addictive social media use, depression, anxiety and stress in quarantine–An exploratory study in Germany and Lithuania. Journal of Affective Disorders Reports, 5: 100182. https://doi.org/10.1016/j.jadr.2021.100182 **PMid:34179864 PMCid:PMC8214329**

Devi HM, Purborini N, and Chang HJ (2021). Mediating effect of resilience on association among stress, depression, and anxiety in Indonesian nursing students. Journal of Professional Nursing, 37(4): 706-713.

https://doi.org/10.1016/j.profnurs.2021.04.004
PMid:34187668

GebreEyesus FA, Tarekegn TT, Amlak BT, Shiferaw BZ, Emeria MS, Geleta OT, and Chanie ES (2021). Levels and predictors of anxiety, depression, and stress during COVID-19 pandemic among frontline healthcare providers in Gurage zonal public hospitals, Southwest Ethiopia, 2020: A multicenter cross-sectional study. PLOS ONE, 16(11): e0259906. https://doi.org/10.1371/journal.pone.0259906
PMid:34843502 PMCid:PMC8629282

Hernández-Sampieri R, Fernández Collado C, and Baptista Lucio P (2018). Metodología de la investigación. McGraw-Hill Interamericana, Mexico City, México.

İlhan B and Küpeli İ (2022). Secondary traumatic stress, anxiety, and depression among emergency healthcare workers in the middle of the COVID-19 outbreak: A cross-sectional study. The American Journal of Emergency Medicine, 52: 99-104. https://doi.org/10.1016/j.ajem.2021.11.051
PMid:34894474 PMCid:PMC8641431

Islam MA, Barna SD, Raihan H, Khan MNA, and Hossain MT (2020). Depression and anxiety among university students during the COVID-19 pandemic in Bangladesh: A web-based cross-sectional survey. PLOS ONE, 15(8): e0238162. https://doi.org/10.1371/journal.pone.0238162
PMid:32845928 PMCid:PMC7449469

Karing C (2021). Prevalence and predictors of anxiety, depression and stress among university students during the period of the first lockdown in Germany. Journal of Affective Disorders Reports, 5: 100174. https://doi.org/10.1016/j.jadr.2021.100174
PMid:34642682 PMCid:PMC8497174

Li LSE, Wong LL, and Yap KYL (2021a). Quality evaluation of stress, anxiety and depression apps for COVID-19. Journal of Affective Disorders Reports, 6: 100255. https://doi.org/10.1016/j.jadr.2021.100255
PMid:34704086 PMCid:PMC8531275

Li Y, Scherer N, Felix L, and Kuper H (2021b). Prevalence of depression, anxiety and post-traumatic stress disorder in health care workers during the COVID-19 pandemic: A systematic review and meta-analysis. PLOS ONE, 16(3): e0246454. https://doi.org/10.1371/journal.pone.0246454
PMid:33690641 PMCid:PMC7946321

Lopes AR and Nihei OK (2021). 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(10): e0258493. https://doi.org/10.1371/journal.pone.0258493
PMid:34644347 PMCid:PMC8513908

Mautong H, Gallardo-Rumbea JA, Alvarado-Villa GE, Fernández-Cadena JC, Andrade-Molina D, Orellana-Román CE, and Cherrez-Ojeda I (2021). Assessment of depression, anxiety and stress levels in the Ecuadorian general population during social isolation due to the COVID-19 outbreak: A cross-sectional study. BMC Psychiatry, 21(1): 1-15. https://doi.org/10.1186/s12888-021-03214-1
PMid:33910550 PMCid:PMC8080088

Poudel S, Ishak A, Perez-Fernandez J, Garcia E, León-Figueroa DA, Romaní L, and Rodriguez-Morales AJ (2022). Highly mutated SARS-CoV-2 Omicron variant sparks significant concern among global experts–What is known so far? Travel Medicine and Infectious Disease, 45: 102234. https://doi.org/10.1016/j.tmaid.2021.102234
PMid:34896326 PMCid:PMC8666662

Prakash J, Dangi A, Chaterjee K, Yadav P, Srivastava K, and Chauhan VS (2021). Assessment of depression, anxiety and stress in COVID-19 infected individuals and their families. Medical Journal Armed Forces India, 77: S424-S429. https://doi.org/10.1016/j.mjafi.2021.06.013
PMid:34334912 PMCid:PMC8313061

Woon LSC, Leong Bin Abdullah MFI, Sidi H, Mansor NS, and Nik Jaafar NR (2021). Depression, anxiety, and the COVID-19 pandemic: Severity of symptoms and associated factors among university students after the end of the movement lockdown. PLOS ONE, 16(5): e0252481. https://doi.org/10.1371/journal.pone.0252481
PMid:34043731 PMCid:PMC8158968