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Assessment of Depression, Anxiety and Stress in COVID-19 Positive Students of Northern Kerala

	
Shaimol T^{*1}, Anilasree B. P², Anju M³, Akshaya K⁴, Nivedya M⁵, ShahalaFebin V⁶, G Babu⁷	
<i>Devaki Amma Memorial College of Pharmacy, India.</i>	
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ABSTRACT

AIM: To assess the prevalence of anxiety, stress, and depression in COVID-19-infected students of Northern Kerala. **OBJECTIVES:** To assess the prevalence of anxiety, stress, and depression in COVID-19-infected students, and the association between Depression, Anxiety, and Stress Scale-21(DASS-21) with age, gender, and educational status. **METHODOLOGY:** DASS 21, a self-report questionnaire consisting of 7 questions each regarding anxiety, depression, and stress. Each item is scored from 0 to 3. If a student scored >14 for depression, >10 for anxiety, and > 17 for stress, were referred for further counseling. Data collection was done in printed and Google format. **RESULTS & DISCUSSION:** Out of 206 subjects most were in the age group of 18-22. Undergraduate students possess 58.3 %. 94.2 % of the participants were quarantined at home and 5.8 % at quarantine centers. In the prevalence rate of depression, 65 % of the subjects were normal, and 12.6 % with a moderate form of depression. In anxiety, 54.8 % were normal, and 17.9 % with mild depression. In Stress 76.6 % are normal, 8.2 % with mild stress, and 5.8 % were severely stressed. The most prevalent issue was anxiety than depression and stress. **CONCLUSION:** The major prevalent issue in this study was anxiety and found a significant association of age with depression and stress. It is necessary to make efforts to develop positive mental health and well-being in the pandemic, particularly in vulnerable women. Students require attention, assistance, and support from society, families, institutions, etc.

INTRODUCTION

AIM: To assess the prevalence of anxiety, stress, and depression in COVID-19-positive students.

OBJECTIVE: To assess the prevalence of anxiety, stress, and depression in COVID-19-infected students and also to find the association between Depression, Anxiety, and Stress Scale-21 with age, gender, and educational status.

MATERIALS AND METHODS

- **Study site:** The study was conducted among students in various institutions in Northern Kerala.
- **Study Design:** Cross-sectional questionnaire-based study.
- **Study Period:** The study was conducted for a period of 6 months, from November 2021 to April 2022.
- **Study Tool:** Depression, Anxiety, and Stress Scale-21

Category	Depression	Anxiety	Stress
Normal	0-4	0-3	0-7
Mild	5-6	4-5	8-9
Moderate	7-10	6-7	10-12
Severe	11-13	8-9	13-16
Extremely severe	14+	10+	17+

Each question was scored from 0 to 3. If a student scored >14 for depression, >10 for anxiety, and > 17 for stress, they were referred for further counseling. Used Instatgraphpad.

Study procedure

A cross-section survey was conducted between November to April, during COVID-19 third wave. This study employed a quantitative research design as the aim of the study was to explore the level of depression, anxiety, and stress among healthcare students. As the data collection was done using a validated questionnaire in printed and Google format. The questionnaire consisted of 7 questions regarding Anxiety, 7 for depression, and 7 for stress.

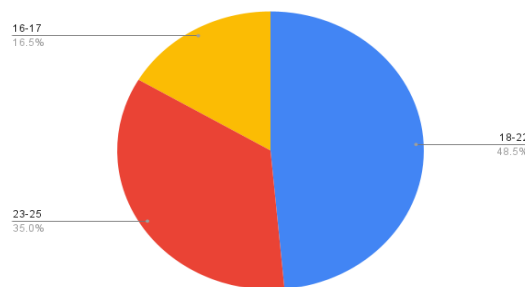
Each item is scored from 0 (did not apply to me) to 3 (applied to me very much or most time)The Google form link had been posted and circulated using various social media platforms such as WhatsApp and email. The questionnaire had two domains. The questionnaire was distributed in both Malayalam and English. The first domain included the demographic of the students. The second domain had multiple-choice questions related to depression, anxiety, and stress. Each scale had 7 items and its total score was calculated with the sum of the items belonging to that scale and varied between 0-21 points. Each question was scored from 0 to 3. If a student scored >14 for depression,>10 for anxiety, and> 17 for stress. Items 1,2,3,4,5,6, and 7 belonged to the depression scale, items 8,9,10,11,12,13and14 to the anxiety scale, and items 15,16,17,18,19,20 and 21 to the stress scale. The collected data was correlated with the demographic data of the students by using statistical analysis.

Statistical analysis

The association between the anxiety, depression, and stress scores within the demographic characteristics was performed using the Chi-square test. A ‘p-value of 0.05 was considered statistically significant.

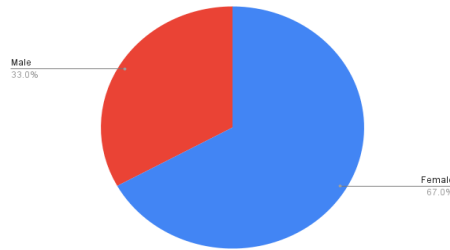
RESULTS AND DISCUSSION

AGE GROUP DISTRIBUTION



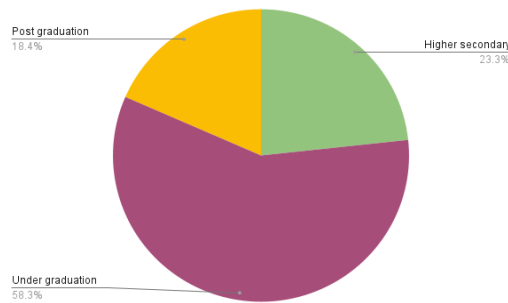
A total of 206 subjects participated in the cross-sectional survey, and the number of respondents was categorized into 16-17, 18-22, and 23-25 years. The majority of students (48.5 %) were in the age group of 18-22.

DISTRIBUTION OF SUBJECTS BASED ON AGE



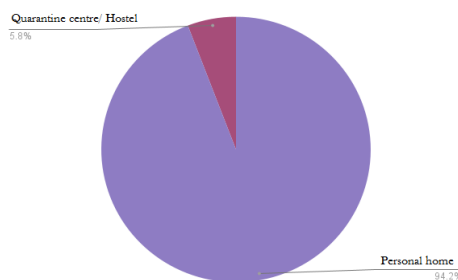
In the survey, 33 % were male(n=68) and 76 % were female(n=138). When the DASS score of males and females in the study were particularly in comparison, it was observed that males had slightly lower scores than females.

DISTRIBUTION OF SUBJECTS BASED ON EDUCATIONAL STATUS



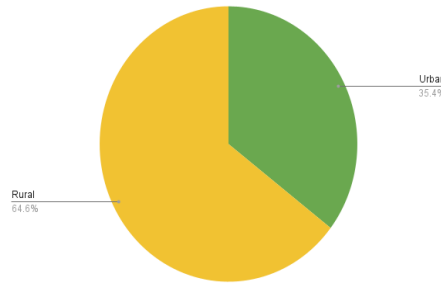
On comparing the impacts of educational status among subjects the majority of scholars were from Undergraduate profession (58.3 %) than others.

QUARANTINE FACILITY



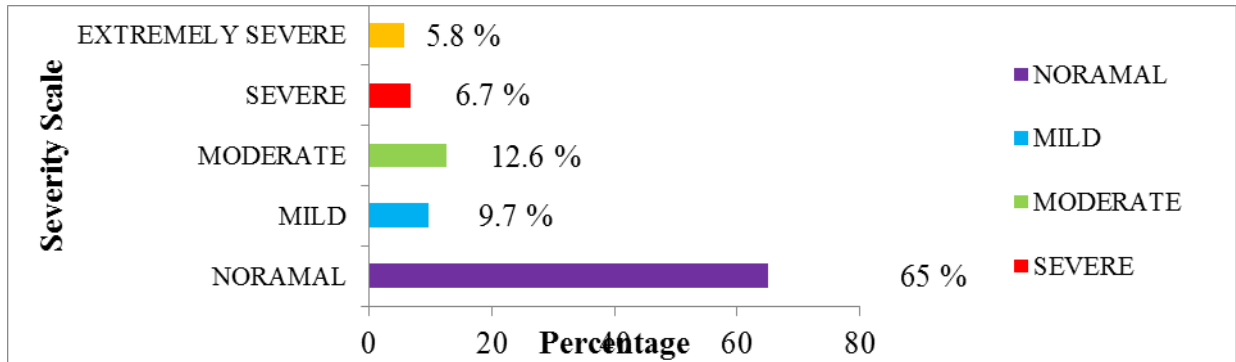
In the study majority of the participants were quarantined at personal home (94.2 %) and very few were at quarantine centres or hostels (5.8 %).

LOCALITY:



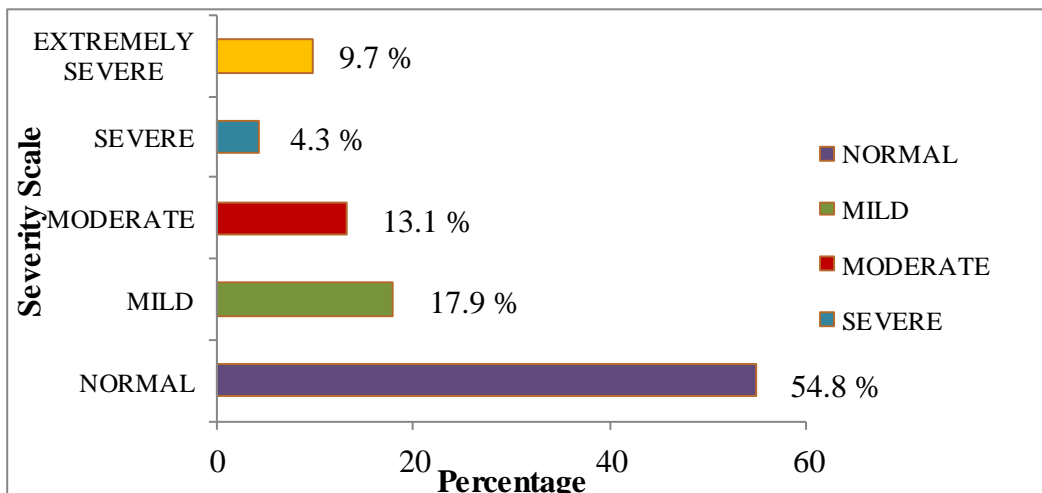
The cross-sectional questionnaire-based survey showed that 64.6 % of subjects were residing in rural areas and 35.4 % were from urban areas.

PREVALENCE OF DEPRESSION BASED ON DASS-21



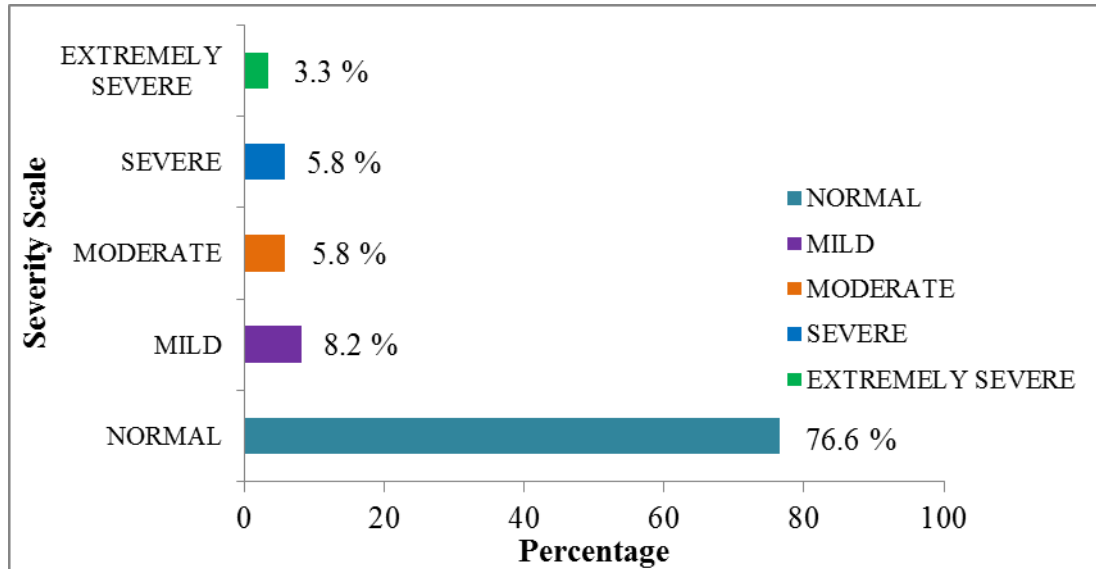
The prevalence rate of depression in our study population (n=206). It was found that majority (65 %) of the subjects were normal followed by 12.6 % who were reported with moderate form of depression.

PREVALENCE OF ANXIETY BASED ON DASS-21



The prevalence of anxiety in our study population (n=206) is depicted. It was found that the majority (54.8 %) of the subjects were normal followed by a mild form of depression (17.9 %).

PREVALENCE OF STRESS BASED ON DASS-21



The findings of our results illustrated that the majority of the individual who was screened to assess the prevalence of stress among the study subjects reported as normal (76.6 %), followed by 8.2 % of the subjects who reported in the survey that they are subjected to mild stress during the pandemic and about 5.8 % of the subjects were severely stressed.

DISTRIBUTION LEVEL OF DEPRESSION, ANXIETY, AND STRESS

Levels	Depression (%)	Anxiety (%)	Stress (%)
Normal	134 (65.0 %)	113 (54.8 %)	158 (76.6 %)
Mild	20 (9.7 %)	37 (17.9 %)	17 (8.2 %)
Moderate	26 (12.6 %)	27 (13.1 %)	12 (5.8 %)
Severe	14 (6.7 %)	9 (4.3 %)	12 (5.8 %)
Extremely severe	12 (5.8 %)	20 (9.7 %)	7 (3.3 %)

The results of the study showed that approximately 34.8 % participants had different levels of depression, 45 % suffered from different levels of anxiety and 23.1 % experienced mild to extremely severe stress symptoms. It revealed that the most prevalent issue was anxiety rather than depression and stress.

ASSOCIATION OF DASS-21 AND AGE GROUP

Depression							
Sl. no	Age group (Years)	Normal (0-4)	Mild (5-6)	Moderate (7-10)	Severe (11-13)	Extremely severe(>14)	P=0.008*
1	16-17	22	15	15	12	32	
2	18-22	109	51	81	48	65	
3	23-25	53	46	113	104	82	
Anxiety							
Sl. no	Age group (Years)	Normal (0-3)	Mild (4-5)	Moderate (6-7)	Severe (8-9)	Extremely severe(>10)	P=0.3064
1	16-17	29	28	26	0	31	
2	18-22	88	82	75	52	123	
3	23-25	62	60	77	25	105	
Stress							
Sl. no	Age group (Years)	Normal (0-7)	Mild (8-9)	Moderate (10-12)	Severe (13-16)	Extremely severe(>17)	P=0.036*
1	16-17	22	15	15	12	32	
2	18-22	109	51	81	48	65	
3	23-25	53	46	113	104	82	

*Statistically significant value of $p < 0.05$

Chi-square determined the association between age and DASS-21 scores. Significant p values were reached for depression and stress.

ASSOCIATION OF DASS-21 AND GENDER

Depression							
Sl. No	Gender	Normal (0-4)	Mild (5-6)	Moderate (7-10)	Severe (11-13)	Extremely Severe(>14)	P=0.0114*
1	Male	126	94	147	104	144	
2	Female	58	18	62	60	50	
Anxiety							
Sl. No	Gender	Normal (0-3)	Mild (4-5)	Moderate (6-7)	Severe (8-9)	Extremely Severe(>10)	P=0.1830
1	Male	114	110	139	51	187	
2	Female	65	60	39	26	72	
Stress							
Sl. No	Gender	Normal (0-7)	Mild (8-9)	Moderate (10-12)	Severe (13-16)	Extremely Severe(>17)	P=0.2328
1	Male	261	92	65	132	94	
2	Female	99	50	64	42	34	

Statistically significant value of $p < 0.05$

Our study shows that there is a significant association between gender and depression.

ASSOCIATION OF DASS-21 AND EDUCATIONAL STATUS

Depression							
Sl. no	Educational Status	Normal (0-4)	Mild (5-6)	Moderate (7-10)	Severe (11-13)	Extremely severe(>14)	P=0.0080*
1	HS	0	15	15	25	65	
2	UG	123	85	172	71	93	
3	PG	28	12	22	68	36	
Anxiety							
Sl. no	Educational Status	Normal (0-3)	Mild (4-5)	Moderate (6-7)	Severe (8-9)	Extremely severe(>10)	P=0.6705
1	HS	46	37	33	17	97	
2	UG	82	96	106	60	179	
3	PG	35	37	39	0	33	
Stress							
Sl. no	Educational Status	Normal (0-7)	Mild (8-9)	Moderate (10-12)	Severe (13-16)	Extremely severe(>17)	P=0.3238
1	HS	77	26	22	13	51	
2	UG	201	92	96	134	57	
3	PG	82	24	11	27	20	

By performing the Chi-square test, we found that there is a significant association between educational status and depression.

CONCLUSION

The major prevalent issue was anxiety rather than stress and depression. By performing the chi-square test we found a significant association between age group with depression and

stress. We also noted a significant association between gender and depression. Females have more mental issues than males hence it is necessary to make efforts to develop positive mental health and well-being, as well as to monitor and promote it to alleviate the pandemic's negative impacts, particularly in vulnerable women. Student's mental health suffers significantly, and they require the attention, assistance, and support of society, families, and schools or colleges. Our results can be used to develop a psychological intervention for students, as well as to deploy public mental health measures alongside pandemic response efforts in the early phases of an outbreak.

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