



# PREVALENCE OF DEPRESSION, ANXIETY AND STRESS AMONG UNDERGRADUATE STUDENTS IN MEHSANA DISTRICT, GUJARAT

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**Abstract :** The aim of the study was to investigate the prevalence of depression, anxiety, and stress levels among undergraduate students of educational institutions in Mehsana district of Gujarat. 1330 undergraduate students were included in the study who were selected with the help of Convenient sampling method. In this study, psychological distress was measured through standardized, semi-structured questionnaire named DASS (Depression Anxiety and Stress Scale). A questionnaire containing socio demographic factors and the short version of Depression, Anxiety, and Stress Scale-21 (DASS-21) was used to assess the likelihood of psychological distress. The prevalence of Depression was 59.47%, where 12.63% were mildly depressed, 19.02% were moderately depressed, 9.47% were severely depressed and 18.34% were extremely severely depressed. The prevalence of Anxiety was 66.84%, where 8.12% were mildly anxious, 18.94% were moderately anxious, 6.99% had severe anxiety and 32.78% were suffering from extremely severe anxiety. The prevalence of Stress was 41.05%, out of which 9.32% were mildly stressed, 12.18% were moderately stressed, 10.07% were severely stressed and 9.47% were extremely severely stressed. Stress, anxiety, and depression symptoms were common and negatively impacted students' quality of life. It is important to put into practice the interventions that are meant to support college students' mental health.

**Index Terms:** Depression, Anxiety, Stress, DASS-21, Mental Health, Quality of Life, Undergraduate Student

## I. INTRODUCTION

Mental well-being is essential to overall human health, according to the World Health Organization. However, due to the course of the disease, challenges in managing treatment, and rising prevalence, mental health issues are the primary cause of disability and a major global public health concern. especially stress, anxiety, and depression are seen as significant markers of mental health that, in the absence of treatment, may have detrimental effects on individuals.<sup>[1]</sup> According to recommendations by the World Health Organization (WHO), an individual's physical, mental, and social well-being should be considered well-being when defining their degree of health.<sup>[4]</sup>

"A state of psychological mental health in which a human being recognizes his or her capabilities, can cope effectively the everyday challenges of life as a whole can work effectively and efficiently, and is able of to

his or her surroundings" is what the World Health Organization (also known as the "WHO") defines as mental health.<sup>[6]</sup> Even those with good mental health occasionally experience sadness, illness, frustration, or unhappiness; this is a normal aspect of living a fully realized life.<sup>[6]</sup>

A substantial number of teenagers and students suffer from common, severe, and incapacitating mental health disorders like depression and anxiety. The detrimental impact of psychological distress on students lowers their sense of self-worth, which can result in a variety of issues on a personal and professional level, including poor academic performance, relationship problems, college dropout, and suicide.<sup>[7]</sup>

Research has indicated that depression is associated with worse academic achievement among college students. According to studies, psychological conditions linked to stress are neglected, which increases the risk of psychiatric diseases and can have a major negative impact on a person's social and professional life.<sup>[7]</sup>

Depression is a complex condition that causes a great deal of social load and impairs one's ability to operate on an individual, social, interpersonal, and professional level.<sup>[2]</sup> Numerous signs of depression include feeling constantly down, anxious, or "empty," hopelessness, guilt, worthlessness, and/or helplessness, impatience, anxiety, and lack of interest in once-pleasurable activities or hobbies.<sup>[5]</sup> In addition, some of the most typical symptoms of depression include difficulty sleeping or eating, intense tiredness, sadness, feelings of guilt or poor self-worth, and lack of attention.<sup>[9]</sup>

An internalized, maybe fictitious, activation of dread is called anxiety. An unconscious response to depression tendencies is anxiety, which can develop into extreme dread or panic. The physical and psychological symptoms include frequent urination, shaking of the hands and lips, dry mouth, and restless sleep.<sup>[2]</sup> The word "anxiety" refers to a common emotion people have when they're under pressure or confront a threat. Anxiety is a natural emotion to have sometimes.<sup>[10]</sup> Meanwhile, anxiety is the body's response to what appears to be a threat and is brought on by a person's thoughts, feelings, and emotions. It manifests as tension, elevated blood pressure, heart rate, breathing rate, perspiration, difficulty swallowing, dizziness, and chest pain.<sup>[9]</sup>

Stress is defined as the body's general reaction to demands placed upon it or unsettling occurrences in the surroundings. Academic stress comes in numerous forms for university students as they pursue their studies.<sup>[5]</sup> An estimated 12–50% of college students worldwide meet at least one diagnostic requirement for a mental health condition. Main sources of stress during college life include biological factors like age and gender, especially being female, and academic pressure from things like exams and workload, lack of free time, competition, worries about not living up to parents' expectations, establishing new relationships, and moving to an unfamiliar environment.<sup>[1]</sup>

Research accomplished across different undergraduate student samples worldwide indicates a moderate to high prevalence of stress, anxiety, and depression in this demographic.<sup>[1]</sup>

Young individuals who experience depression and anxiety frequently develop low self-esteem, self-blame, hopelessness, suicidal thoughts, impatience, and irritability.<sup>[9]</sup> University students frequently report feeling stressed, anxious, or depressed, which can have a serious detrimental impact on both their mental and academic well-being.<sup>[5]</sup> Research has repeatedly demonstrated that anxiety and depression have a detrimental impact on quality of life.<sup>[3]</sup> Anxiety and stress are closely related since anxiety is the body's reaction to stress in dangerous situations.<sup>[10]</sup>

The idea of a "dynamic state of internal equilibrium" also takes into consideration and recognizes the fact that individuals in good mental health are capable of feeling ordinary human emotions, such as dread, frustration, sorrow, and grief, but they also have the resilience to quickly return to a constantly changing state of internal equilibrium.<sup>[6]</sup> The triangular model of psychological disorders served as the foundation for the development of the Depression, Anxiety & Stress Scale-21 (DASS-21), a shorter version of the DASS-

42.<sup>[8]</sup>The DASS-21 was created in this way to identify the unique characteristics of stress, anxiety, and depression.<sup>[8]</sup>

The DASS-21 has been adapted into 45 languages and is widely used as a measure of psycho pathological symptoms of anxiety and depression in both research and first-line therapeutic services because it is a straightforward tool that assesses three domains.<sup>[8]</sup> Research on the DASS-21's structure in multiple US university student samples found that the universal distress factor explains most of the variance in the scale's items and overall score, which is in line with clinical observations on the co-occurrence of mood disorders as well as anxiety.<sup>[8]</sup>

## **NEED OF THE STUDY**

Psychological distress such as depression, anxiety and stress are frequent among undergraduate students which can affect their academic performance, physical health and Psychosocial well being. So, This study will assess depression, anxiety and stress symptoms in undergraduate students.

## **MATERIALS AND METHODOLOGY**

**TYPE OF RESEARCH** - Observational study

**STUDY DESIGN** -Cross-sectional study

**SAMPLE DESIGN** - Convenient sampling

**STUDY POPULATION** -Undergraduate students aged between 18 - 24 years

**SAMPLE SIZE** -1330 undergraduate students

**STUDY SETTING** -Nootan College of Physiotherapy, Sankalchand Patel University, Mehsana district, Gujarat.

**STUDY DURATION** - 6 months

**SAMPLING CRITERIA:**

### **[4.8.1] Inclusion Criteria:**

- Ability to give informed consent
- Age 18-24
- Both male and female
- Ability to read English
- Participants studding in MBBS, BAMS, BHMS, BDS, B.Pharmacy, BPT, BE, Diploma in Engineering, BBA and BCA respectively.

### **[4.8.2] Exclusion Criteria:**

- Not volunteering to participate in the study
- Participants having habit of smoking or tobacco chewing
- Those who are taking any psychiatric treatment/drugs

## **OUTCOME MEASURES**

Depression, anxiety, stress scale 21 items [DASS 21]

## **DATA COLLECTION PROCEDURE**

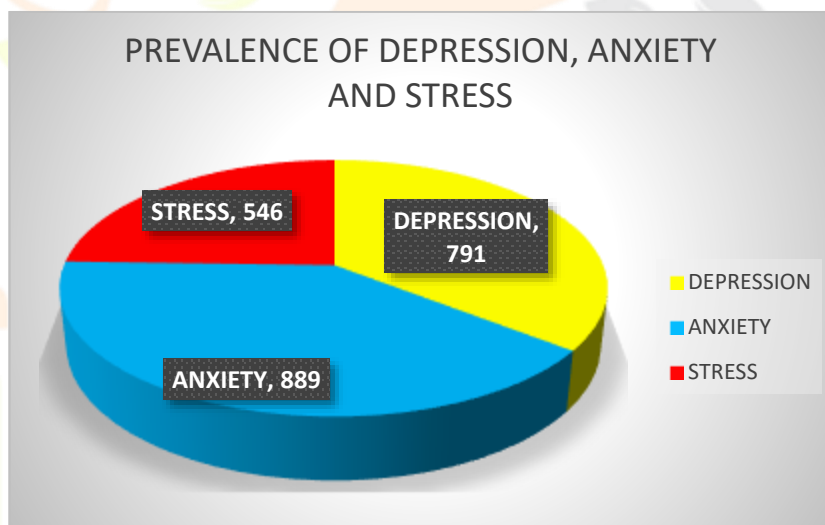
A cross-sectional study was carried out following ethical clearance from the Nootan College of Physiotherapy institutional ethics committee at Sankalchand Patel University in Visnagar, Gujarat,

India. The study was conducted among 1330 undergraduate students in Mehsana District in order to assess the depression, anxiety and stress using Depression, Anxiety, Stress scale 21 items (DASS 21). Undergraduate students aged between 18-24 years were included in the study. For digital and quick collection of the information, the questionnaire was prepared with the help of Google form in English language. Google form comprised of questions with the aim of collecting data from undergraduate students to assess the depression, anxiety and stress symptoms. Participants, who will fulfill the selection criteria, will be informed about the study and requested to sign the written informed consent forms. The procedure will be clearly explained to all the participants and their consent will be taken and ask them to fill Google Form. The convenient sampling technique will be used among participants. The data will be collected and then it will be used for statistical Analysis.

### **STATISTICAL ANALYSIS**

1330 undergraduate students aged between 18-24 years in Mehsana district were assessed for depression, anxiety and stress using Depression, Anxiety, Stress scale 21 items (DASS 21). The data was analyzed using MS Excel. Descriptive statistics were performed for Demographics. The prevalence of depression, anxiety, and stress was determined by considering the number of participants affected and dividing it by the total number of participants who answered the Questionnaire.

### **RESULT**



graph (1): prevalence of depression, anxiety and stress

**Table (1) : demographic characteristics of university students sample.**

<b>CHARACTERS</b>	<b>NO.</b>	<b>%</b>
<b>AGE:-</b>		
18	251	(18.7%)
19	244	(18.2%)
20	186	(13.9%)
21	152	(11.3%)
22	194	(14.5%)
23	215	(16.1%)
24	88	(6.6%)
<b>GENDER:-</b>		
MALE	640	(47.8%)
FEMALE	690	(51.6%)
<b>COURSE:-</b>		
MBBS	127	(9.4%)
DENTAL	208	(15.5%)
BAMS	102	(7.6%)
BHMS	121	(9.0%)
PHYSIOTHERAPY	152	(11.3%)
PHARMACY	110	(8.2%)
ENGINEERING	105	(7.8%)
DIPLOMA	100	(7.4%)
BBA	105	(7.8%)
BCA	200	(14.9%)
<b>TYPE OF UNIVERSITY:-</b>		
GOVERNMENT	53	(3.9%)
PRIVATE	1277	(95.5%)
<b>ACADEMIC PERFORMANCE:-</b>		
UNSATISFACTORY	212	(15.8%)
SATISFACTORY	1118	(83.6%)

**table (2):total scores from the dass-21 and by gender.**

DASS-21	Categories	Total(n=1330)	Men(n=640)	Women(n=690)
DASS-D	No depression	539(40.52%)	253(46.9%)	286(53.0%)
	Mild	168(12.63%)	76(45.2%)	92(54.7%)
	Moderate	253(19.02%)	129(50.9%)	124(49.0%)
	Severe	126(9.47%)	76(60.3%)	50(39.6%)
	Extremely severe	244(18.34%)	106(43.4%)	138(56.5%)
DASS-A	No depression	441(33.15%)	207(46.9%)	234(53.0%)
	Mild	108(8.12%)	55(50.9%)	53(49.0%)
	Moderate	252(18.94%)	123(48.8%)	129(51.1%)
	Severe	93(6.99%)	40(43.0%)	53(56.9%)
	Extremely severe	436(32.78%)	215(49.3%)	221(50.6%)
DASS-S	No depression	784(58.94%)	380(48.4%)	404(51.5%)
	Mild	124(9.32%)	57(45.9%)	67(54.0%)
	Moderate	162(12.18%)	77(47.5%)	85(52.4%)
	Severe	134(10.07%)	75(55.9%)	59(44.0%)
	Extremely severe	126(9.47%)	51(40.4%)	75(59.5%)

NS: Non-significant. DASS-21: 21 item Depression, Anxiety Stress Scale. (1)DASS-D: 7-item DASS-21 Depression subscale. (2) DASS-A: 7-item DASS-21 Anxiety subscale. (3) DASS-S: 7-item DASS-21 Stress subscale.

**Table 1** provides the distribution of demographic characteristics:-Age group, Gender, faculty (course), type of university and academic performance for the sample students from university.

**Table 2** shows the total scoring of depression, anxiety, and stress through the DASS-21 Questionnaire based on gender. In general, a total of 640 male students and 690 female students participated in this study. However, the prevalence of depression, anxiety, and stress among female students is higher than that of male students.

**Graph 1** shows the prevalence of depression, anxiety and stress among undergraduate students. Among all of them, 59.47% (791) showed the symptoms of depression, while 66.84% (889) showed the symptoms of anxiety and lastly 41.05% (546) showed the symptoms of stress.

table (3):total scoring of depressionthrough dass-21

<b>DEPRESSION</b>				
<b>QUESTIONS</b>	<b>0-Did not apply to me at all</b>	<b>1-Applied to me to some degree, or some of the time</b>	<b>2-Applied to me to a considerable degree or a good part of time</b>	<b>3-Applied to me very much or most of the time</b>
3 (d) I couldn't seem to experience any positive feeling at all	460	410	316	144
5 (d) I found it difficult to work up the initiative to do things	462	442	281	145
10 (d) I felt that I had nothing to look forward to	507	409	264	150
13 (d) I felt down-hearted andblue	533	418	251	128
16 (d) I was unable to become enthusiastic about anything	535	400	260	135
17 (d) I felt I wasn't worth much as a person	528	403	257	142
21 (d) I felt that life was meaningless	651	312	216	151
<b>TOTAL</b>	3676	2794	1845	995
<b>%</b>	39.48442535	30.01074114	19.81740064	10.68743287



table (4):total scoring of anxiety through dass-21

<b>ANXIETY</b>				
<b>QUESTIONS</b>	<b>0-Did not apply to me at all</b>	<b>1-Applied to me to some degree, or some of the time</b>	<b>2-Applied to me to a considerable degree or a good part of time</b>	<b>3-Applied to me very much or most of the time</b>
2 (a) I was aware of dryness of my mouth	487	468	254	121
4 (a) I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	507	415	265	143
7 (a) I experienced trembling (e.g. in the hands)	552	377	251	150
9 (a) I was worried about situations in which I might panic and make a fool of myself	470	407	301	152
15 (a) I felt I was close to panic	509	394	277	150

19 (a) I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)	540	420	265	105
20 (a) I felt scared without any good reason	546	407	246	131
<b>TOTAL</b>	<b>3611</b>	<b>2888</b>	<b>1859</b>	<b>952</b>
<b>%</b>	<b>38.78625134</b>	<b>31.02040816</b>	<b>19.96777658</b>	<b>10.22556391</b>

table (5):total scoring of stress through dass-21

<b>STRESS</b>				
<b>QUESTIONS</b>	<b>0-Did not apply to me at all</b>	<b>1-Applied to me to some degree, or some of the time</b>	<b>2-Applied to me to a considerable degree or a good part of time</b>	<b>3-Applied to me very much or most of the time</b>
1 (s) I found it hard to wind down	730	317	189	94
6 (s) I tended to over-react to situations	380	464	314	172
8 (s) I felt that I was using a lot of nervous energy	434	462	270	164
11 (s) I found myself getting agitated	492	432	264	142
12 (s) I found it difficult to relax	472	413	284	161
14 (s) I was intolerant of anything that kept me from getting on with what I was doing	556	395	234	145
18 (s) I felt that I was rather touchy	534	398	260	138
<b>TOTAL</b>	<b>3598</b>	<b>2881</b>	<b>1815</b>	<b>1016</b>
<b>%</b>	<b>38.64661654</b>	<b>30.94522019</b>	<b>19.49516649</b>	<b>10.91299678</b>

**Table 3** shows that among all them, 39.4%(3676) doesn't show the symptoms of depression while 30%(2794) shows mild symptoms while only 20%(1845) shows somewhat symptoms whereas >less than 10.7%(995) shows severe symptoms of depression indicated through DASS-21 scale

**Table 4** shows that among all them 38.7%(3611) doesn't show the symptoms of anxiety while 31%(2888) shows mild symptoms ,whereas only20%(1859) shows somewhat symptoms and >less than 10.2%(952) shows severe symptoms of anxiety through DASS-21 scale

**Table 5** shows that among all them 38.7%(3598) doesn't show the symptoms of stress while 31%(2881) shows mild symptoms while and 19.4%(1815) shows somewhat symptoms whereas >less than 11%(1016) shows severe symptoms of stress through DASS-21 scale



## DISCUSSION

This study aimed at estimating the prevalence of anxiety, depression and stress among University undergraduate students. DASS-21 questionnaire is useful to identify the prevalence of symptoms of depression, anxiety and stress. We identified a significant prevalence of symptoms of stress (41.05%), anxiety (66.84%) and depression (59.47%) in our population. As most of the students suffered from moderate depression (19.02%), (12.63%) suffered from mild depression, (9.47%) suffered from severe depression and (18.34%) suffered from extreme severe depression. Anxiety was another disorder revealed by the study among Sankalchand Patel University students where (8.12%) of the students suffered from mild anxiety, (18.94%) suffered from moderate anxiety, (6.99%) suffered from severe anxiety and (32.78%) suffered from extreme severe anxiety. Also students suffered from mild stress (9.32%), moderate stress (12.18%), severe stress (10.07%) & extreme severe stress (9.47%). This study proven that more finding depression, anxiety and stress are in female as compare to male.

DASS-21 questionnaire be used to determine which participants are at risk of developing these problems. However, additional tools should be used to establish a formal diagnosis. Finally, we would like to highlight that data collection took place over a period of Six months and, consequently, it is likely that academic life conditions were different for some of the students. In any case, we argue that our results bring to light the need to implement strategies to protect and, if applicable, improve the mental health and well-being of college students.

It was well-known that students are more exposed to psychological disorders than the overall population.<sup>[13]</sup> This is due to not only the academic burdens but also many other factors as growing up to adulthood, the demands future practical life, developing and keeping relationships and other essential factors.<sup>[8]</sup>

Meyers *et al.*(2019) supported the theory that suggests early sexual trauma exposure may affect the likelihood of developing psychopathology, i.e. depression, anxiety, and suicidal ideation, through neurological developmental mechanisms.<sup>[12]</sup>

Many studies have examined the connection between lifestyle decisions and mental health. Therefore, a variety of mechanisms, including the release of endogenous substances like endorphins, the activity of the hypothalamic-pituitary-adrenal (HPA) the regulation of stress responses, the enhancement of sleep quality, and the development of self-monitoring and other coping mechanisms, have linked physical activity to psychological well-being.<sup>[14,15]</sup>

In studying socio demographic characters of the students it was found that prevalence of depression, anxiety and stress were high among female, student age >17 years, single, living with their families, had low or moderate social class and academic achievement with statistically significant difference.<sup>[5]</sup>

This may be due to parental pressure, high expectation from parents, inadequate time management, low self-esteem, poor academic performance, peer competition, younger age<sup>[10]</sup>, witnessing pain, suffering and death<sup>[11]</sup>, but also of environmental factors, such as economic burden of studying,<sup>[11]</sup> assignments, peer relationship, peer pressure to secure a high marks in exams.<sup>[7]</sup> very high tuition fees, lack of family support, and higher or lower 'readiness' to report the stress or any other complaint.<sup>[11]</sup>

Students are in an age range that stress disorders are very prevalent. The stress may be due to individual factors (genetics, age and sex), interpersonal (quality of relationships between individuals) and social (dormitory and university environment) (Cohen & Janicki-Deverts,2012).<sup>[4]</sup>

## CONCLUSION

Depression is a popular mental illness that has a significant negative impact on people's lives and society. Depression, anxiety and stress tends to adversely impact an individual's quality of life. We found a

considerable prevalence of symptoms of depression, anxiety and stress in our population which, in some cases, do not occur in isolation, but coexist. In addition, we identified several factors associated with these symptoms. Factors including age, gender, courses, type of university and academic performance of college students, Internet use seem to be strongly associated with psychological distress in the college student population. We argue that our results can help in designing strategies for the early identification of mental health disorders, as well as psychological and other interventions leading to mental health promotion and well being in the population of college students. We can help the students overcome the difficulties in their academic life by enhancing the mentor/mentee programs and implementing them regularly.

Private university students are more likely to suffer from depression, anxiety, and stress compared to the students of public universities due to various contributing factors such as family structure, academic performance, and habit of taking part in sports and physical activities. When comparing female students to male students at public and private universities, they are more likely to experience severe or extreme anxiety. distinct coping techniques are needed for students at various phases since students in different academic years face distinct risk factors from the time they enroll in college until they graduate. Universities should be aware of these risk factors and implement measures to minimize those factors while providing mental health treatments to students.

### **LIMITATIONS OF THE STUDY**

This study has a few limitations:

1. This study we didn't focus on other causes of depression, stress, and anxiety such as the inherent personality, demographic information, and family conditions or status.
2. Other limitations of this study was the lack of use of various data collection tools along with self-assessment questionnaires. Since this was a college-based study, we do not know the effect of excluding non-college-going adults. As the data were self-reported, under- or over-reporting of data may have taken place due to stigma related to mental disorders.

### **FUTURE RECOMMENDATIONS OF THE STUDY**

- Study can be revised including a large sample size.
- Sample can be revised from other districts or states.

### **SUMMARY**

Depression, anxiety, and stress are common mental health issues that can affect anyone, regardless of age, gender, or background. Depression is a mood disorder that causes a persistent feeling of sadness and loss of interest. Anxiety is a feeling of fear, nervousness, and worry. Stress is characterized as a condition of anxiety or tension in the mind brought on by a challenging circumstance. The prevalence of depression, anxiety, and stress among undergraduate students is a significant concern. Studies have shown that a considerable portion of undergraduate students experience these mental health issues, impacting their academic performance and overall well-being. Academic pressure, social isolation, and financial stress contribute to these challenges. So, the study aimed to determine the prevalence of depression, anxiety, and stress among undergraduate students in the Mahesana district, Gujarat with the use of DASS-21 scale (self-questionnaire). Out of 1330 students, 640 were male participants while 690 were female participants. According to the result, 91 % of the prevalence of depression, anxiety, and stress among undergraduate students in the

Mahesana district, Gujarat. Both males and females were included; females had more depression, anxiety, and stress in comparison to males.

## REFERENCES

- [1] Ramón-Arbués E, Gea-Caballero V, Granada-López JM, Juárez-Vela R, Pellicer-García B, Antón-Solanas I. The Prevalence of Depression, Anxiety and Stress and Their Associated Factors in College Students. *International Journal of Environmental Research and Public Health*. 2020 Sep 24; 17(19):7001
- [2] Asif S, Muddassar A, Shahzad TZ, Raouf M, Pervaiz T. Frequency of depression, anxiety and stress among university students. *Pakistan Journal of Medical Sciences*. 2020; 36(5):971–6.
- [3] Gan GG, Yuen Ling H. Anxiety, depression and quality of life of medical students in Malaysia. *Med J Malaysia*. 2019 Feb 1;74(1):57-61.
- [4] Armoon B, Mokhayeri Y, Haroni J, Karimy M, Noroozi M. How is the quality of life of students?: The role of depression, anxiety and stress. *Semantic Scholar*. 2019 [cited 2021 Mar 3]
- [5] Salem GM, Allah MB, Said RM. Prevalence and predictors of depression, anxiety and stress among Zagazig University students. *Med J Cairo Univ*. 2016;84(2):325-34.
- [6] Galderisi S, Heinz A, Kastrup M, Beezhold J, Sartorius N. Toward a New Definition of Mental Health. 2015 Jun 4;14(2):231–3. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4471980/>
- [7] Narayan R Mutalik, Shankar Moni, S B Choudhari, Govind S Bhogale. Depression, Anxiety, Stress among College Students in Bagalkot: A College Based Study. *International Journal of Indian Psychology*. 2016 Sep 25;3(4)
- [8] Ali AM, Hori H, Kim Y, Kunugi H. The Depression Anxiety Stress Scale 8-Items Expresses Robust Psychometric Properties as an Ideal Shorter Version of the Depression Anxiety Stress Scale 21 Among Healthy Respondents From Three Continents. *Frontiers in Psychology*. 2022 Mar 24;13.
- [9] Kamruzzaman M, Hossain A, Islam MA, Ahmed MS, Kabir E. Prevalence of depression, anxiety, stress, and their associated factors among university students in Bangladesh.
- [10] Gautam D, Aryal SC, Fernando TA, Afza T, Deepak TR, Airee YS, Joshi DD. Prevalence of Depression, Anxiety & Stress among First Year Students in Physiotherapy Colleges at Bangalore, India. *Indian Journal of Physiotherapy & Occupational Therapy Print-(ISSN 0973-5666) and Electronic-(ISSN 0973-5674)*. 2020 Jan 30;14(1):78-82.
- [11] Racic M, Todorovic R, Ivkovic N, Masic S, Joksimovic B, Kulic M. Self- perceived stress in relation to anxiety, depression and health-related quality of life among health professions students: A cross-sectional study from Bosnia and Herzegovina. *Slovenian Journal of Public Health*. 2017 Oct 9;56(4):251–9.
- [12] Taylor G, McNeill A, Girling A, Farley A, Lindson-Hawley N, Aveyard P. Change in mental health after smoking cessation: systematic review and meta-analysis. *BMJ*. 2014 Feb 13;348. Available from: <https://www.bmj.com/content/348/bmj.g1151>
- [13] Eisenberg D, Gollust SE, Golberstein E, Hefner JL. Prevalence and Correlates of depression, anxiety, and Suicidality among University students. *American Journal of Orthopsychiatry*. 2007 Oct;77(4):534–42. Available from: <https://onlinelibrary.wiley.com/doi/abs/10.1037/0002-9432.77.4.534>

- [14] Lubans D, Richards J, Hillman C, Faulkner G, Beauchamp M, Nilsson M, et al. Physical Activity for Cognitive and Mental Health in Youth: a Systematic Review of Mechanisms. PEDIATRICS. 2016 Aug 19;138(3):e20161642–2.
- [15] Kandola A, Vancampfort D, Herring M, Rebar A, Hallgren M, Firth J, et al. Moving to Beat Anxiety: Epidemiology and Therapeutic Issues with Physical Activity for Anxiety. 2018 Jul 24; 20(8). Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6061211/>

