

# Evaluation Of Depression Level And Its Impact On Academic Matters Among College Students: A Quantitative Study

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## ARTICLE INFO

## ABSTRACT

Depression has become very prevalent in today's generation. This might be due to various reasons like generation change, increasing value towards education, stress regarding the future and many more. Every individual, be it a teenager, a college going student, an adult or a parent, everyone in today's world is facing one or the other sort of mental health disorder, or depression in common. This Study mainly focuses on college or university students who are much more prone to be the victims of depression and are mostly forced to take wrong decisions with respect to their lives. The study puts forth various aspects for comparison such as gender, students type etc. and concludes who is susceptible to suffering more. The data was collected using convenience sampling where a standard questionnaire called Patient Health Questionnaire (PHQ-9) was shared among 700 students out of which 342 responded. The questionnaire had two parts, demographic information part and the actual questionnaire. We depicted statistics with the use of ANOVA test for much more elaborated detail. We also delved on the impact of depression on academic matters among college students using quantitative analysis.

**Keywords—** Depression level, quantitative study, PHQ-9, health care

## I. INTRODUCTION

Depression is also called depressive disorder. It is a mental disorder. I.e., It is a mood complaint characterized by patient sadness, loss of interest, low tone- regard, and physical and internal prostration. Depression can be classified as mild, moderate and severe. It can affect the way we suppose, feel, and bear. It can also oppressively affect day- to- day conditioning similar as eating, sleeping, working, etc. [1]. A person with depression will be vulnerable to being constantly sad, irritable, and anxious. They may frequently cry and feel mentally unstable. The main symptoms are sleeping disorder, very poor concentration, loss of weight or appetite poor self-worth, Despondency regarding the Prologue. Depression may frequently make the person wonder about their actuality and question their regard. As a complaint that goes unnoticed by numerous people, when they get to know they have depression, it will be too late. A person who wants to be diagnosed with depression must have the symptoms for at least two weeks. Depression can be caused by numerous factors. In some cases, depression is caused by natural factors that may include genetics, a family history of depression, health conditions, or certain specifics [2]. Social factors like stress, isolation, once trauma, lack of support, etc. can also alter depression, whereas cerebral factors like defective mood regulation and negative thinking patterns can also be considered causes of depression. Still, depression isn't caused by a single term; it has complex causes. Depression on its own can beget severe symptoms like self- harming, which ultimately leads to suicidal tendencies. consumption of liquor and drugs can assist aggravate the condition of depression.

Depression can happen to anyone at any time. It can affect life in all manner, including relationships with friends, family, work, and community. An estimated 5% of adults worldwide are depressed [3]. An estimated 3.8% of people suffer from depression, including 5.7% of individuals over 60 and 5% of adults (4% of males and 6% of women). Depression affects about 280 million people worldwide in 2023 [3]. Women are around 50% more likely than men to experience depression [3]. According to the National Institute of Mental Health (NIMH) Trusted Source, there were 21 million U.S. adults who had a major depressive episode in 2021.[4]

According to the World Health Organization, 264 million people around the world have gone through depression in 2017 [3]. In 2019, around 970 million (i.e., 1 in every 8 people) people in the world were living with internal diseases, including anxiety and depression [3]. In 2023, it was noted that around 22 of grown-ups in the U.S. reported symptoms associated with depression and anxiety. It's shown that the COVID- 19 situation also touched off depression. According to WHO, Statista, and weforum.org, depression is nominated the most common internal issue in India [3]. In 2015, it was estimated that further than 14% of the total population in India suffered from some form of depressive complaint. One in seven Indians was affected by internal diseases of varying inflexibility in 2017, and the burden of internal diseases has nearly doubled since 1990. A study conducted by the World Health Organization in 2015 shows that one in five Indians may suffer from depression in their continuance, original to 200 million people. Depression is more common in women than men. Nearly every thirteenth person in India runs the threat of going through depression during their continuance. The fact that the rate of people having depression is constantly increasing rather than dwindling must be noticed and oppressively considered.

The doctors estimate the demand of opinion on the base of the Diagnostic and Statistical Manual of Mental diseases (DSM) [5]. People who have a certain health condition are more vulnerable to depression than normal cases. There's no special way to treat depression, but the symptoms can be controlled by making changes in day- to- day conditioning like eating further healthily, exercising, and trying to engage further socially [3]. Depression can also be treated using antidepressant medicines, psychotherapy, or, in some cases, a combination of the two. It is important to know that depression has colorful forms, like bipolar complaint, seasonal affective complaint, dysthymia, etc. Opines are described as one of the severe forms of depression that affect the brain and nervous system. Grounded on the type, psychotherapy is given else. For illustration, cognitive-behavioral remedy is for depression caused by negative studies and feelings [4]. Neuromodulation curatives, similar as electroconvulsive Therapy (ECT), Transcranial Magnetic Stimulation (TMS), and Vagus Nerve Stimulation (VNS), are also on the list. Interpersonal Therapy (IPT), a type of psychotherapy that focuses on perfecting interpersonal connections and communication chops to palliate symptoms of depression, is denoted as the most effective and short- term treatment for depression. Still, the opinion of depression is solely in the case's hands. Depression can only be cured by the restraint of the victim. However, we should incontinently seek backing for them and take the necessary conduct, if we notice anyone around us suffering from the symptoms of depression.

Most college students are at increased risk of depression. To identify the depression level among college students of Kerala, we conducted a quantitative study. When we identify the depression level among students, the teachers or parents can give more care to that student so that his/her life becomes somewhat easy. The paper is organized as follows. Section 2 discusses the related studies; Section 3 discusses the methodology used and Section 4 discusses results and discussion. Finally, Section 5 discusses the conclusion.

## II. RELATED STUDY

In this section, we discuss the different related studies. Only very few studies are present in this area.

In 2005, Kim, *et al* [8] deliberated the amount of Internet Addiction among Korean adolescents, and how it was related to depression and suicidal thoughts. This study was conducted among 1573 secondary school students. It elucidated the association between Internet Addiction, stress, depression and suicidal thoughts. The authors discussed various factors such as the increased use of the Internet in sharing information and knowledge in the world. It also discusses that the extensiveness of Internet usage in not biased towards any gender. Internet disorders may result from uncontrolled use of the Internet rather than from independent addiction disorders and further leading to other disorders like depression, suicidal thoughts etc. The paper also puts forth about the need for Intervention programs to prevent Internet Addiction among teenagers.

In 2018, Tsaras *et al* [11], studied the factors that predicted the amount and possibility of depression and anxiety among mental health nurses. This paper involves recognizing the risk factors determining depression and other mental health disorders. It also includes defining an individual approach about assessing, analyzing forecasting and creating appropriate mental health conditions. The study enrolled about 110 mental health nurses from two public psychiatric hospitals in Athens and Greece, with a response rate of about 73.3%. They made use of various assessment instruments such as PHQ-2 (Patient Health Questionnaire - 2) and GAD-2

(Generalized Anxiety Disorder) and the outcomes were thoroughly examined. It was noticed that age, marital status, education level and working experience was related to the increase of depression rate. University students and mental health nurses were found to be most prone to mental health disorders. Almost 50% of mental health nurses have elevated levels of depression and anxiety and this had to be improved to avoid additional health problems and poor patient care.

Haand *et al* [5] (2020) studied the association between social media addiction and depression. This was a qualitative study and was conducted among 384 students of three different universities. These were Shaikh Zayed, Ahmad Shah Abdali, and Pamir University. This study identifies the relationship between addiction to social media and depression among college or university students in Khost province of Afghanistan. The study utilized The Pearson Correlation coefficient and simple linear regression to determine the correlation between social media addiction and depression. It was observed that when a user uses social media excessively, it also results in more chances of depression. The linear regression analysis showed that depression significantly predicted social media addiction. However, there did not exist a strong correlation between social media addiction and depression. Research findings confirmed that technology addiction explains mental health issues irrespective of geographical location, literacy level, and a weak economy.

In 2020 Ahmed *et al* [6] lead a quantitative transverse study among 556 undergraduate students at Jimma University regarding the management of stress. The results concluded that the academic administrators must inculcate proactive measures to combat the issue, including organizing special classes for humanities and social science students so that they develop skills and adopt effective strategies to manage stress and depression. This paper also stated that longitudinal and qualitative studies would also be beneficial in understanding the relationship between the outcome and associated variables. Overall, giving importance to mental health is necessary for university students' overall well-being and academic success.

In 2020, Awadalla *et al* [9] did a longitudinal cohort study to traverse over the relationship between depression, anxiety, and academic performance among Emirati university students. This study included 404 students who were aged between 17-25 years of age. It focused on the relationship between depression, anxiety, and academic performance of university students in UAE (United Arab Emirates). They used two sampling technologies. These were cluster random sampling (for enrolling participants) and Stratified random sampling (to select the classes of faculties). The measures used for the study are demographic and socio-economic factors, depression and anxiety symptoms, and academic performance. This study also depicted the impacts of depression and anxiety symptoms among students and the importance of their mental health.

In 2021, Foroughi [7] studied the correlation between Instagram obsession, academic performance, social anxiety and depression among college students. This was a qualitative study among 364 university students. The Centre for Epidemiologic Studies Depression Scale was used to assess depression. The study indicated excellent results. The result of the measurement model showed that Instagram obsession is a second-order construct. In the structure model, the result also found a positive association between entertainment needs and Instagram addiction. Instagram addiction resulted on a negative impact on students' academic performance and student life.

In 2021, Monzonís-Carda *et al* [10] examined the relationship between the risk of depression and academic performance. This quantitative study aimed to test the mediating role of weight status in the association between the risk of depression and Academic Performance (AP). This study was held among 265 adolescents, and they used a convenience sampling technique. It showed that the risk of depression score indirectly influenced some AP variables through weight status.

### III. METHODOLOGY

This study focuses on the depression level among college students. We followed a quantitative approach. The study data was collected through an online questionnaire survey method. We send the questionnaire through the crossplatform messaging service, WhatsApp to different college students of Kerala. For that we used convenience sampling.

We aimed following research questions:

- 1) Investigate the depression level among college students (minimal, mild, moderate, severe) of Kerala.
- 2) How will the gender, education qualification, student type (hosteller or day scholar) be affected by depression?
- 3) How are college students affected by depression in terms of academic matters?

Table 1: Demographic information of the respondents		
Demographic Factors	Total count or Frequency	Percentage
<b>Gender</b>	Male (M): 82	23.97%
	Female (F): 259	75.73%
	Prefer Not to Say: 1	1
	Total: 342	Average (mean) = 114 Standard Deviation, $\sigma = 107.731$
<b>Class</b>	UG: 249 (M=52, F= 196)	72.80%
	PG: 81 (M=58, F=23)	23.68%
	Research Students: 12 (M=6, F=6)	3.50%
	Total: 342	Standard Deviation, $\sigma = 99$ Mean, $\mu = 114$
<b>Age</b>	$\leq 21$ : 254	74.26%
	$> 22$ : 88	25.73%
	Total: 342	Standard Deviation, $\sigma = 86.5$ Mean, $\mu = 167$

### Participants and their demographic information

An online questionnaire survey was used for the quantitative collection of data for college students in Kerala between January 1, 2024, and February 29, 2024, for a period of 2 months. We received 342 responses from different undergraduate, graduate, and research students in Kerala. For that, we prepared a Google Form and sent the link to 700 different college students through WhatsApp. Only 342 out of 700 answered the questionnaire, indicating a 48.9% response rate. Response rate of Female is 23.97% and male is 75.73%. While UG response rate (72.80%) is more than PG (23.68%) and research students response rate (3.50%). Table 1 shows the demographic details of the respondents.

### Research Instruments

We used a standard questionnaire called Patient Health Questionnaire (PHQ-9). Its Cronbach's alpha is 0.839. The data was gathered via an online Google Form questionnaire that had two primary elements: demographic information part and Actual questionnaire part. The first segment attempted to gather the respondents' personal information, including name, age, email address, class (UG or PG), department, gender, hosteller, or day scholar. We employed a 4-point Likert scale to assess depression level (not at all, several days, more than half the days, nearly every day). The Values assigned are: Not at all= 0, Several days = 1, More than half the days = 2, Nearly every day = 3. For finding the depression level, we had to calculate the total score. Based on the score, we can categorize the depression level as minimal depression to severe depression, which is given below. Table 2 shows the depression severity based on PHQ9.

Further, we asked the students with moderate and moderately severe depression levels, who were a total of 150 students, to attempt a questionnaire related to their academic performance in terms of how difficult they find it to cope with academics. Out of 150 students, we gathered the responses of 50 students via Google form questionnaire. The students had to choose between 4 options (Not at all, slightly difficult, very difficult, extremely difficult). Few of the questions are as follows:

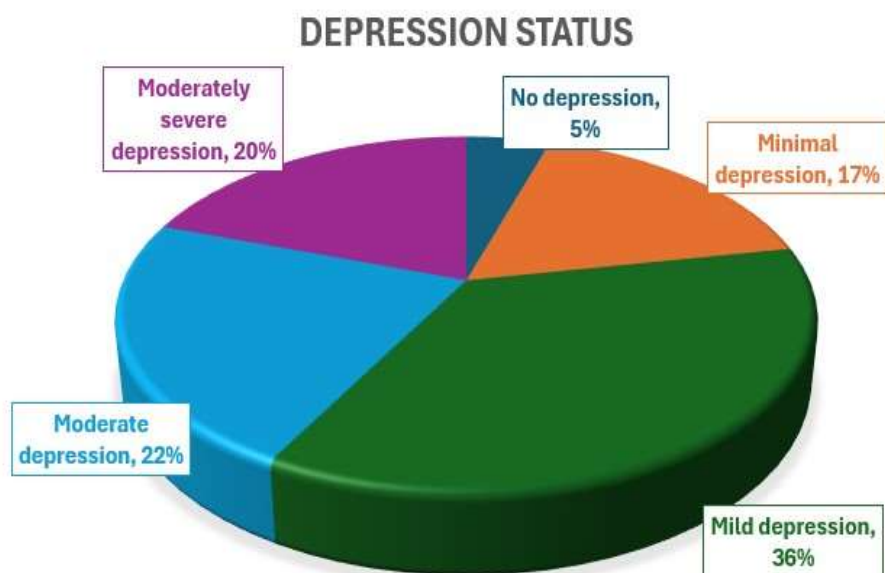
1. How challenging is it to concentrate on studies?
2. To what extent do you struggle to complete your assignments on time.
3. How difficult is it for you to retain information and study effectively for exams?
4. How challenging do you find it to participate in class discussions and group activities?
5. How difficult is it to manage your time and stay organized with academic tasks?
6. How hard is it for you to seek help or support when facing academic challenges?
7. How challenging is it for you to engage with course material and stay motivated to learn?
8. To what extent do you struggle with test anxiety or performance pressure during assessments?
9. How difficult is it for you to communicate with teachers or professors about your academic difficulties?
10. How challenging do you find it to balance academic responsibilities with personal well-being and self-care?

Table 2: Shows the depression severity based on PHQ9	
Total Score	Depression Severity
0	No depression
1-4	Minimal depression
5-9	Mild depression
10-14	Moderate depression
15-19	Moderately severe depression

Table 3: Shows the depression status of college students.		
Depression Types	Total numbers	Percentage
No depression	16	4.6%
Minimal depression	59	17.25%
Mild depression	123	35.96%
Moderate depression	77	22.51%
Moderately severe depression	67	19.59%
Total	342	

#### IV. RESULTS AND DISCUSSION

We analyzed the excel response sheet and found that majority of the college students have mild depression (35.96%), 22.51% of college students is affected by moderate depression, while 19.59% is highly affected with severe depression. Fig. 1 shows the depression status of our study and Table 3 shows the respondents depression status. We also did the ANOVA (Analysis Of Variance) test, which is a statistical test used to compare arithmetic means across groups. The results are shown in Table 4 to 9.



**Fig. 1: Shows the depression status of our study.**



Table 4: Shows the depression status based on gender.

<b>Report</b>			
Depression			
Gender	Mean	N	Std. Deviation
Female	9.2201	259	6.51190
Male	10.1566	83	5.99488
Total	9.4474	342	6.39431

Table 5: ANOVA Table based on gender

<b>ANOVA Table</b>							
Depression * Gender			Sum Squares	of df	Mean Square	F	Sig.
	Between Groups	(Combined)	55.133	1	55.133	1.350	0.246
	Within Groups		13887.419	340	40.845		
	Total		13942.553	341			

In Table 5, the test value is 1.350 and the corresponding significance value is 0.246, which is more than 0.05 (means that the group means are not significantly differ). i.e., the difference between the depression levels with respect to gender is not statistically significant. Also, the depression levels are same for both male and female.

From Table 7, the test value is 0.2390 and the corresponding Significance value is 0.787, which is more than 0.05, meaning that the group means do not significantly differ. i.e; the difference between the depression levels with respect to Education level is not statistically significant. The depression levels are the same for the three categories.

From Table 9, the test value is 3.976 and the corresponding Significance value is .041, which is less than 0.05, means that the group means are significantly differ. i.e; the difference between the depression levels with respect to student type is statistically significant. The depression levels are statistically different. From the Mean table 8, depression level is more in Hosteller than Day scholar students.

Table 6: Shows the depression status based on Education level

<b>Report</b>			
Depression			
Education	Mean	N	Std. Deviation
Post Graduation	9.8519	81	5.93530
Research Student	9.7500	12	6.21033
Under Graduation	9.3012	249	6.56248
Total	9.4474	342	6.39431

Table 7: ANOVA Table based on Education level

<b>ANOVA Table</b>							
Depression * Education			Sum Squares	of df	Mean Square	F	Sig.
	Between Groups	(Combined)	19.671	2	9.835	0.239	0.787
	Within Groups		13922.882	339	41.070		
	Total		13942.553	341			

Table 8: Shows the depression status based on Student Type

<b>Report</b>			
Depression			
Student Type	Mean	N	Std. Deviation
Day Scholar	9.0433	254	6.38629
Hosteller	10.6136	88	6.30896
Total	9.4474	342	6.39431

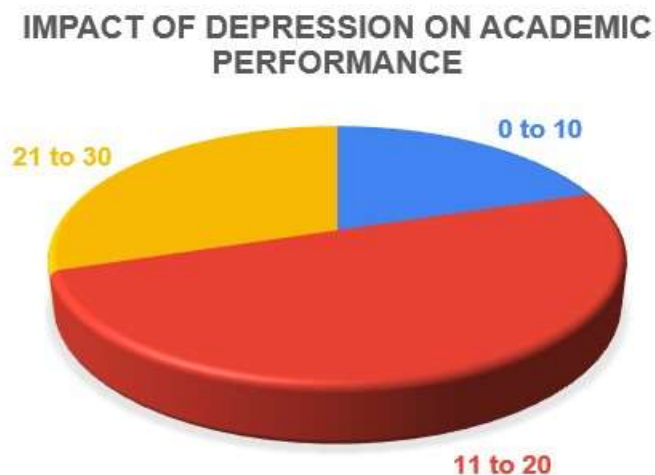
Table 9: Shows the depression status based on Student Type

<b>ANOVA Table</b>							
			Sum of Squares	df	Mean Square	F	Sig.
Depression * Student Type	Between Groups	(Combined)	161.165	1	161.165	3.976	0.041
	Within Groups		13781.387	340	40.533		
	Total		13942.553	341			

On sharing the additional questionnaire to the students with moderate and moderately severe depression levels, were able to analyze the impact of depression among these students. 50 students out of 150 responded to the questionnaire. The students' ratings were added up and was compared to the following scaling system:

- 0-10 - Not causing any difficulty
- 10-20 - Causing slight interruptions
- 20-30 - Causing difficulty in Academics

Fig. 2 depicts a pie chart that shows the statistics of students on to what extent they find it difficult coping with academics.



**Fig. 2. Impact of depression on academic performance**

It was noticed that almost 50% of the students were facing difficulty in academics due to depression. This indicated that depression was a serious issue which had to be worked upon to help students overcome their academic inabilities.

## V. CONCLUSION

Depression has become a trend in the modern world, especially among college students. This has resulted in the incapability of them making right decisions for themselves. Combating this situation has become a major challenge and various organizations and research centers around the globe are making unending efforts to find preventive solutions for depression. This study put forward the extent in which depression has become

common among college students. The statistics were divided into 3 main categories using convenience sampling, namely, gender, student type (day scholar or hosteller) and education level (Undergraduate, Postgraduate, research student etc.). The ANOVA test, which comes with a significant value, was also conducted for much more detailed analysis. If the significance value is more than 0.05, it means that the group means do not significantly differ and vice-versa. A standard questionnaire called Patient Health Questionnaire (PHQ-9) was shared among 700 students in Kerala via WhatsApp, out of which 342 responses were received. On collecting the data, conducting ANOVA test and depicting it in the form of tables, the following outcomes were noticed.

Out of the 342 students, 36% suffer from mild depression which is very concerning. 22% suffer from moderate and 20% students are battling moderately severe depression. The ANOVA Table based on gender depicts that the amount of depression is almost same among male and females. A similar outcome is noticed in the case of Education level. When it comes to student type, it is seen that hostellers are more prone to depression in comparison to day scholars. This is obvious since day scholars get exposure with their families where they get to open about their current happening unlike hostellers who often tend to hide their feeling from their family so as to prevent them from worrying in most of the cases. Analyzing at the above statistics, we can conclude that more than looking for solutions to reduce depression, it becomes our responsibility to prevent depression in the first place and make sure that people around us are in better state of mind and well-being.

## VI. DECLARATIONS

### Compliance with ethical standards

**Conflict of interest:** Nil

**Role of funding source:** Nil

**Studies in humans and animals:** Nil

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