

A Cross Sectional Survey of Depression Among Undergraduate Physiotherapy Students Using Beck's Depression Inventory

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ABSTRACT

Introduction: Depression is a universal problem that affects people belonging to medical profession. In Physiotherapy profession there is constant contact with the patients as well as academic stress which can lead to various mental health problems that need to be identified. Due to limited research in depression in physiotherapy students, the following study was undertaken. **Objectives:** This study is undertaken to identify the incidence of depression in Undergraduate Physiotherapy students of TMV's Lokmanya Tilak College of Physiotherapy, Kharghar, Navi Mumbai. **Methods:** Using Beck Depression Inventory (BDI-II), the study was conducted with a sample size of 156 undergraduate physiotherapy students. The questionnaire was self-administered and the results were calculated. Students from 1st year odd batch to interns were taken for the study. Students who were clinically pre-diagnosed with depression were excluded from the study. **Results:** Overall, 65% have minimal depression, 16% have mild depression, 12% have moderate depression and the remaining 7% have severe depression. Females showed a higher prevalence to depression than males in every year. **Conclusion:** Our study concludes that due to the academic stresses as well as personal stresses in the individual lives the students have shown presence of depression. Minimal and mild depression is seen in more numbers.

Keywords: Depression, Stress, BDI-II, Physiotherapy, Suicide

Depression is a universal problem and is predicted to be the leading cause of disease burden by 2030. As reported by WHO, depression is a common mental disorder, marked by sadness, loss of interest or pleasure, guilt or insecurity, insomnia, anorexia, lethargy and distraction.^[1] In 2015, a universal analysis was made which said that the amount of people suffering from depression crossed 300 million, which is approximately 4.4% of world population, and by 2030, it will constitute as the highest level of disability in the world.^[2] Being a worldwide issue, university students show extreme prevalence. These are a group of people that are enduring a critical transitory period where they transit from adolescence to adulthood which can be very stressful times in a person's life.^[3] An article on prevalence of depression and anxiety on college students, which took place at DY Patil university Navi Mumbai, stated that 48.30% of students suffer from depression.^[4]

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Higher rates of depression and suicidal ideation is seen in Medical Students.^[5] Suicide is the fourth common cause of death in the age group of 15-29, 7 Lakhs people die due to suicide per year.^[6] A 2022 study aimed to evaluate the magnitude and covariates of suicidal ideation, plan, and attempts among medical students found out that 37.2% of their participants had suicidal ideation, 10.9% claimed planned suicide 3.3% attempted suicide.^[7] The rise in psychological problems among medical students are probably due to the academic and social demands which are poured on the students by the college environments especially when they are simultaneously involved in lifestyle and career issues.^[8]

Paramedical students play an important role in the health sector and are hence more prone to depression which is degrading their academic performance.^[6] Physiotherapy is a field which requires a constant contact with the patients than most of the other health professions, hence at times the patient's health and mental condition may affect the psychology of the physiotherapist adversely. ^[8,9] Physiotherapy students also experience a higher academic pressure due to the increase in competitive nature.^[10]

In addition, due to such stressful demands, physiotherapy students tend to burnout which is a multifaceted behavioral syndrome that creates negative responses in individuals who are exposed to these demands for prolonged periods ^[11] and depression and burnout are closely linked.^[12] A recent study that took place in Delhi NCR on Burnout and depression among college students pursuing Bachelor of Physiotherapy and Occupational Therapy stated that out of 197 participants 79.7% suffer from burnout and 66.5% suffer from depression. They are experiencing symptoms like physical exhaustion.^[13]

Apart from this, COVID – 19 pandemic also had a catastrophic effect on psychological well-being.^[14] One study states that the 'fear of academic year loss' is an important factor for psychological health during COVID -19.^[15] for which a lot of students ended up failing and depressed. Treating this psychological health in the physiotherapy students will lead to a better work force.^[9]

Aim

To study the presence of depression in undergraduate physiotherapy students.

Objectives

- To identify the incidence of depression in undergraduate physiotherapy students.
- To study the levels of depression in undergraduate physiotherapy students using Beck's Depression Inventory.

METHODOLOGY

Sample

The sample comprised of one hundred and fifty-six undergraduate physiotherapy students of TMV's Lokmanya Tilak College of Physiotherapy, Kharghar, Navi Mumbai using convenience sampling. The participants were in the age group of 19 – 25 years. Students from 1st year odd batch, 2nd, 3rd, 4th and interns were taken for the study. Students with pre-diagnosed mental disorders or with systemic illness were excluded from the study.

Instruments

Beck's Depression Inventory – ii (BDI-II) was used for the study.

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It is a 21-item self-administrating questionnaire to evaluate the severity of depression in clinical and non-clinical patients. Its validity is 0.93 for college students.^[19] Each item is scored on a scale of 0 – 3.

The 21st question in the questionnaire is culturally inappropriate for the current population hence is been removed. Hence total score 60.

Minimal depression	Mild depression	Moderate depression	Severe depression
0-13	14-19	20-28	29-60

In non-clinical population scores above 20 indicates depression ^[19]

Procedure

The study was conducted after taking ethical approval from the Institutional Ethics Committee of TMV's Lokmanya Tilak College of Physiotherapy, Kharghar. It was a cross sectional survey with convenience sampling having 156 participants. The participants were taken from TMV's Lokmanya Tilak College of Physiotherapy, Kharghar. The participants were recruited following the inclusion criteria. The participant's consent was taken on the consent form after explaining the need and procedure of the study. A demographic sheet was given to every participant asking the participant about their name, age, gender, contact details, year of study, any past medical/surgical history. Participants filled the BECK'S DEPRESSION INVENTORY and the data was recorded. The inventory has 20 objectives each with a point score from 0 - 3. The result can be expressed as a percentage by totaling the scores of each objective. Data was collected and statistically analysed.

RESULTS

Descriptive statistics was used to summarize the data collected in simple numerical form using MS Excel. The data collected was statistically analysed and presented in the form of Pie diagrams and Tables:

Chart 1:

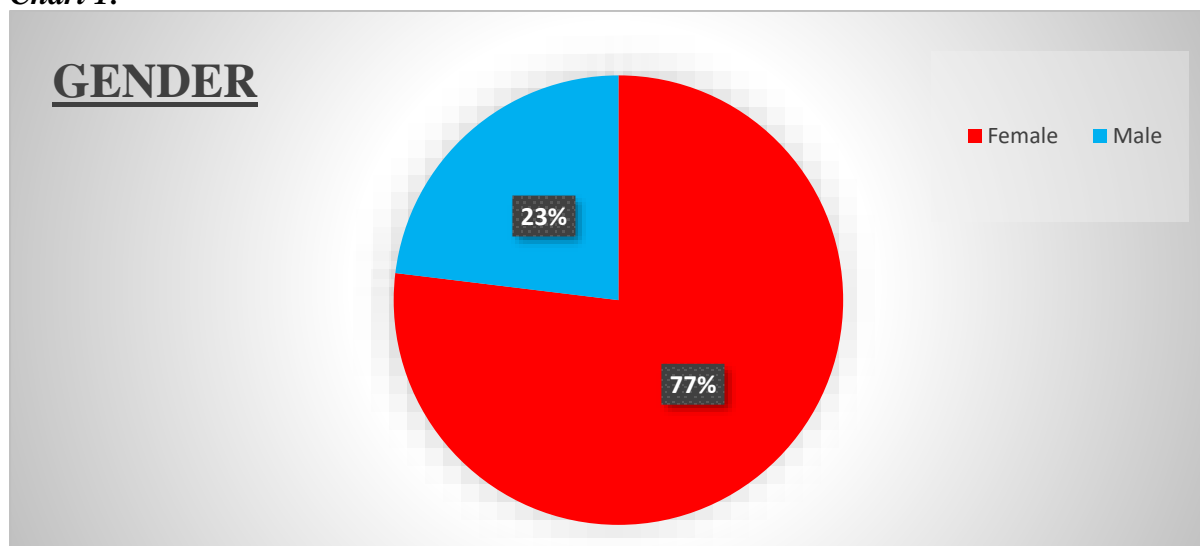


Chart 1 illustrates female students are more than male students.

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Chart 2:

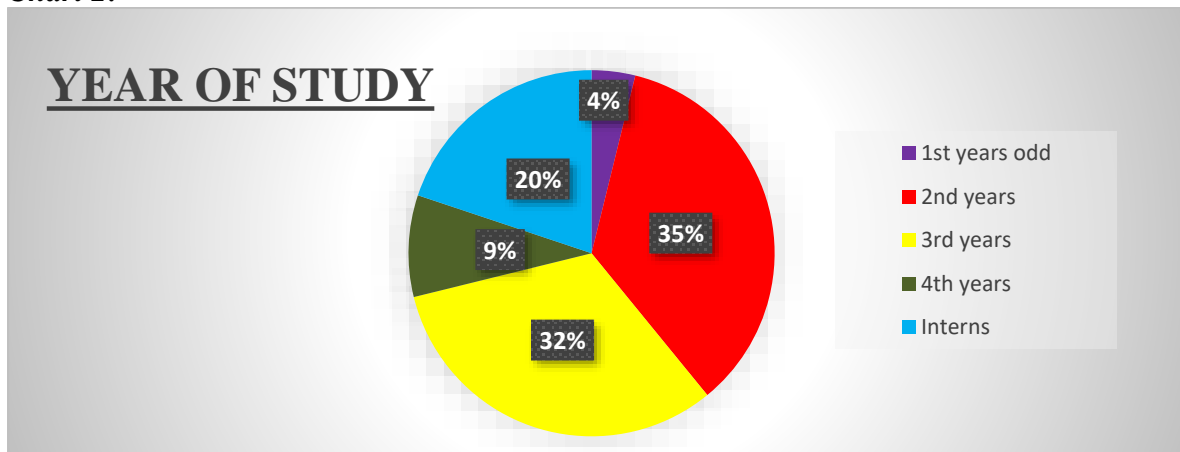


Chart 2 illustrates Academic year of students, all Undergraduate Physiotherapy students at Tilak Maharashtra Vidyapeeth's Lokmanya Tilak College of Physiotherapy, Kharghar have participated in the study.

Out of 156 undergraduate physiotherapy students 3 students have been clinically pre-diagnosed with depression. The following data consists of remaining 153 students.

Interpretation of Beck's Depression Inventory in Undergraduate Physiotherapy Students [Overall]:

Table 1: Overall Interpretation

Row Labels	Count of Interpretation
minimal depression	100
mild depression	24
moderate depression	19
severe depression	10
Grand Total	153

Chart 3:

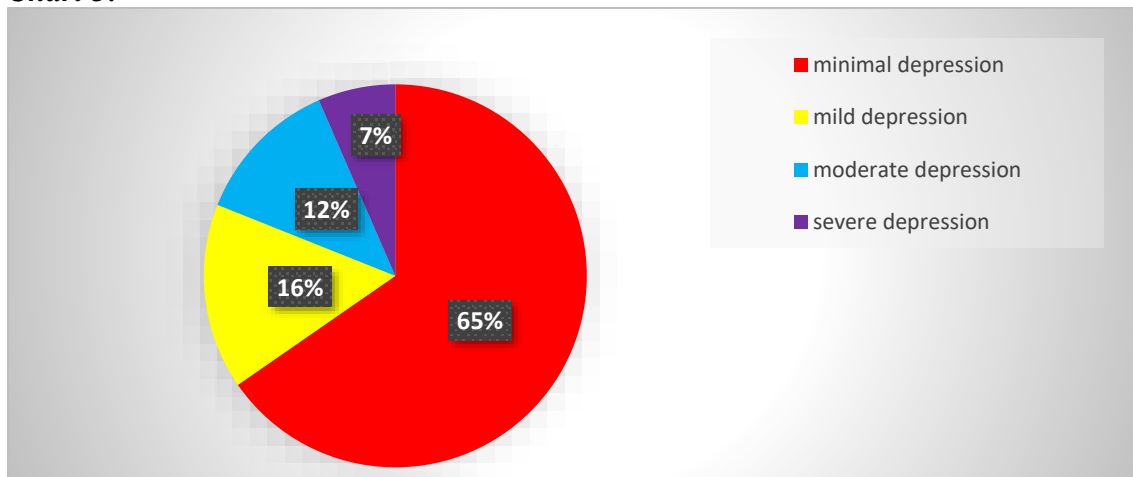


Chart 3 illustrates that out of 153 undergraduate physiotherapy students, 65% show minimal depression, 16% show mild depression, 12% show moderate depression and 7% show severe depression.

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FIRST YEARS(ODD BATCH)

This batch consist of 6 students. This is a repeaters batch who have not yet passed 1st year. The do not copme under exclusion criteria as they have spend more than a year in this course. Out of 6 students 4 are females while 2 are males.

For Females:

Table 2: First Year Females

Row Labels	Count of Interpretation
1st years odd Female	4
minimal depression	1
mild depression	1
severe depression	2
Grand Total	4

Chart 4:

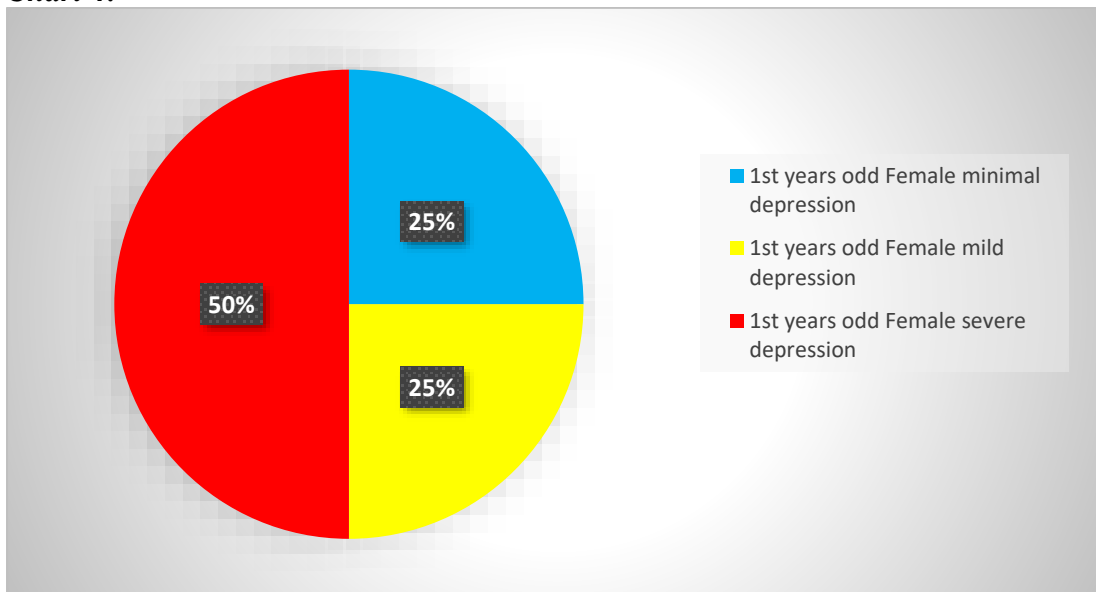


Chart 4 illustrates that of 4 female students 50% show minimal depression, 25% show mild depression and 25% show severe depression.

For males:

Table 3: First Year Males

Row Labels	Count of Interpretation
1st years odd Female	2
minimal depression	2
Grand Total	2

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Chart 5:

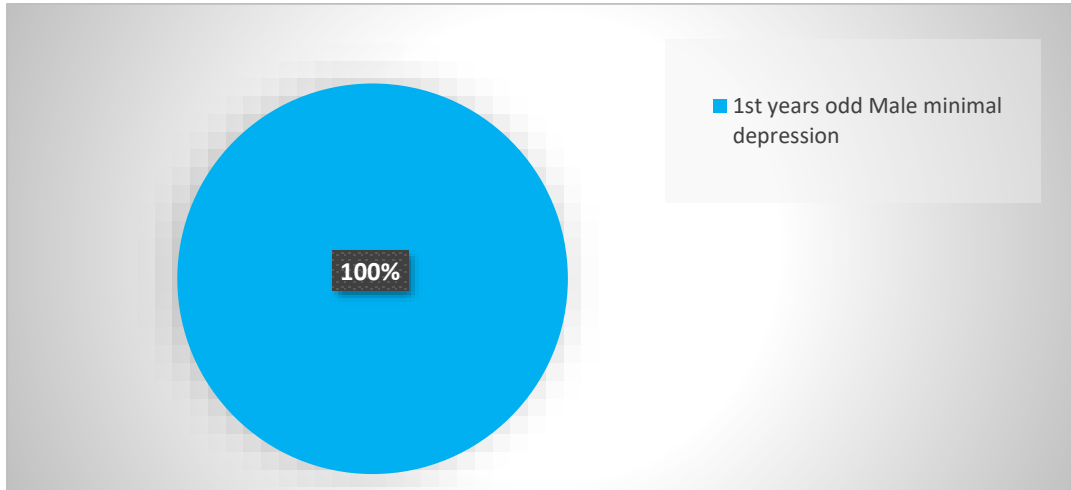


Chart 5 illustrates that all male students show minimal depression.

SECOND YEARS:

This batch consists of 55 students. Out of which 42 are female students and 13 are male students.

For Females:

Table 4: Second Year Females

Row Labels	Count of Interpretation
2nd years Female minimal depression	26
2nd years Female mild depression	7
2nd years Female moderate depression	5
2nd years Female severe depression	4
Grand Total	42

Chart 6:

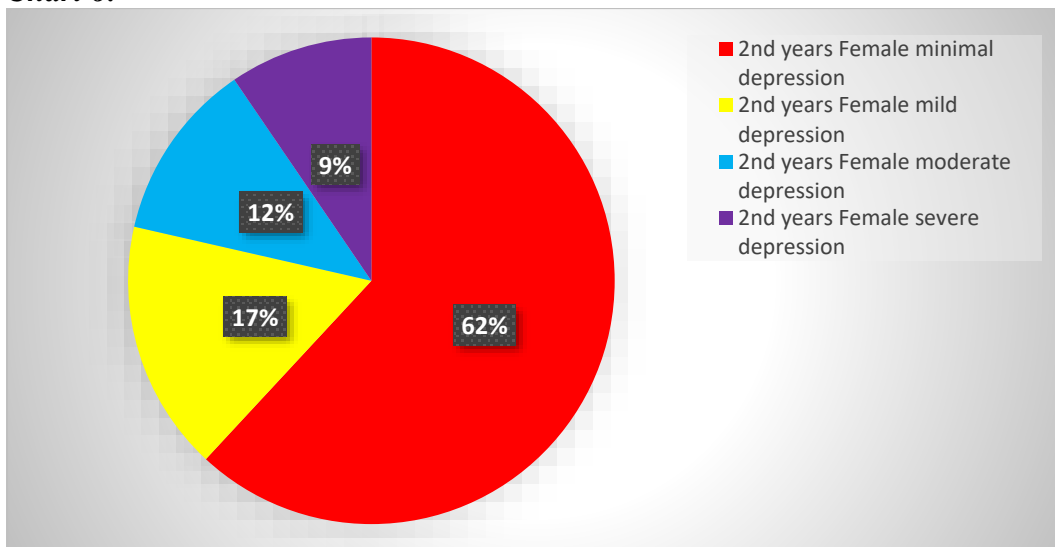


Chart 6 illustrates that out of 42 female students, 62% show minimal depression, 17% show mild depression, 12% show moderate depression and 9% show severe depression.

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For Males:

Table 5: Second Year Males

Row Labels	Count of Interpretation
2nd years	13
Male	
minimal depression	6
mild depression	2
moderate depression	4
severe depression	1
Grand Total	13

Chart 7:

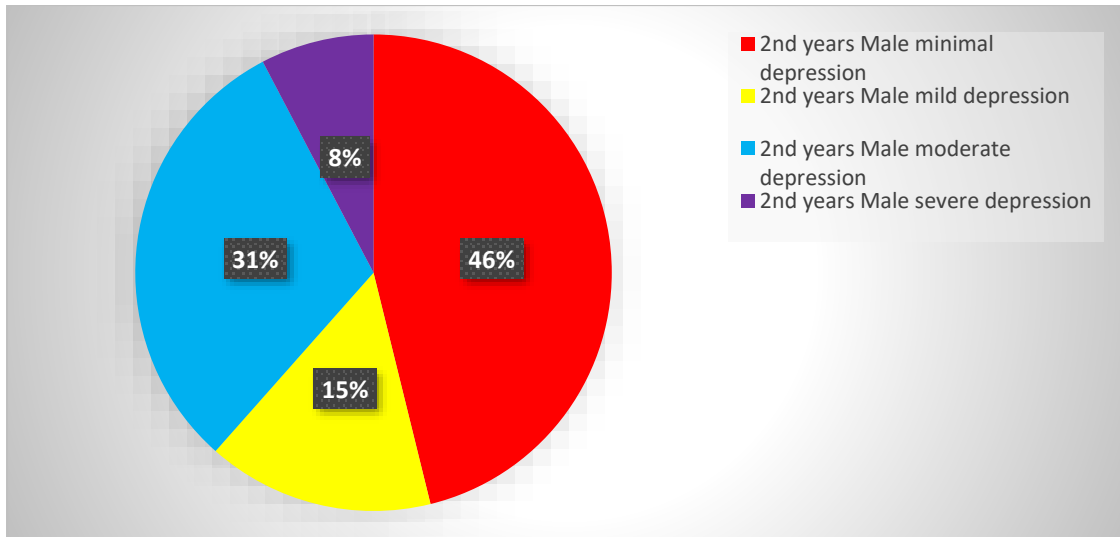


Chart 7 illustrates that out of 13 male students 46% show minimal depression, 15% show mild depression, 31% show moderate and 8% show severe depression.

THIRD YEARS:

This batch consists of 50 students. Out of which 37 are female students and 13 are male students.

For Females:

Table 6: Third Year Females

Row Labels	Count of Interpretation
3rd years	37
Female	
minimal depression	25
mild depression	5
moderate depression	6
severe depression	1
Grand Total	37

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Chart 8:

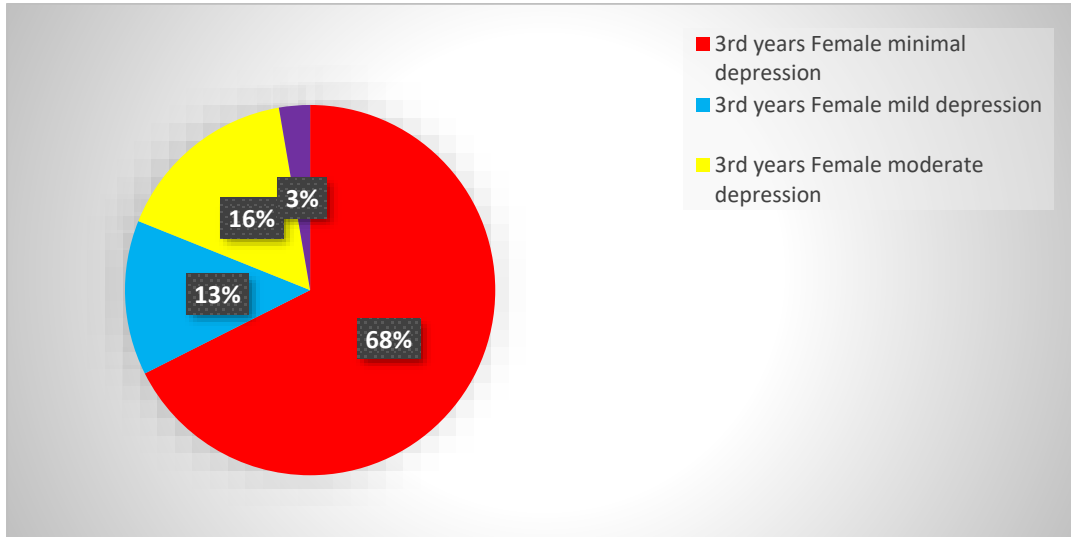


Chart 8 illustrates that out of 37 female students, 68% show minimal depression, 13% show mild depression, 16% show moderate depression and 3% show severe depression.

For Males:

Table 7: Third Year Males

Row Labels	Count of Interpretation
3rd years Male	13
minimal depression	9
mild depression	2
moderate depression	2
Grand Total	13

Chart 9:

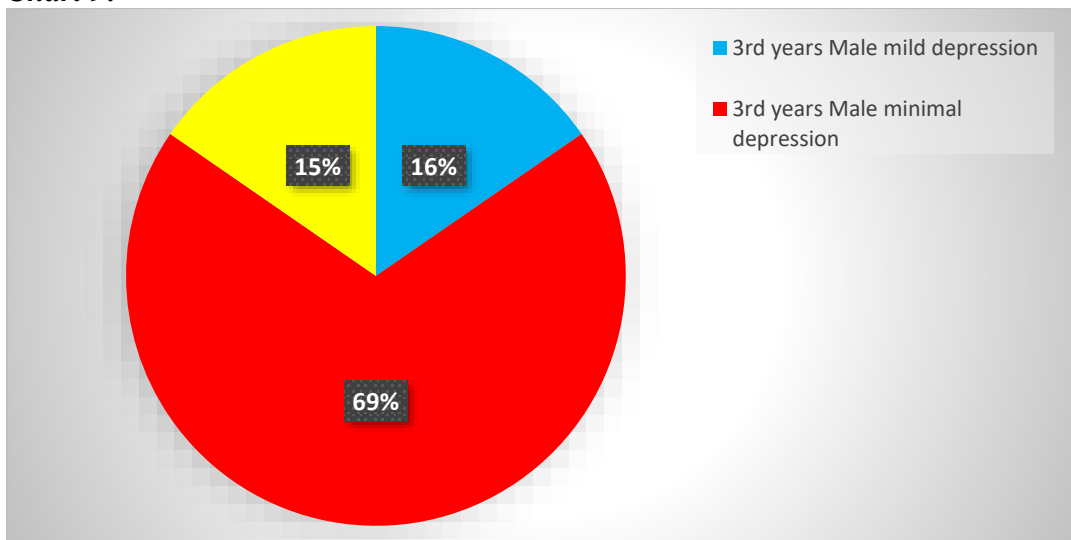


Chart 9 illustrates that out of 13 male students 69% show minimal depression, 16% show mild depression and 15% show moderate depression.

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FOURTH YEARS:

This batch consists of 13 students. Out of which 9 are female students and 4 are male students.

For Females:

Table 8: Fourth Year Females

Row Labels	Count of Interpretation
4th years	9
Female	
minimal depression	5
mild depression	3
severe depression	1
Grand Total	9

Chart 10:

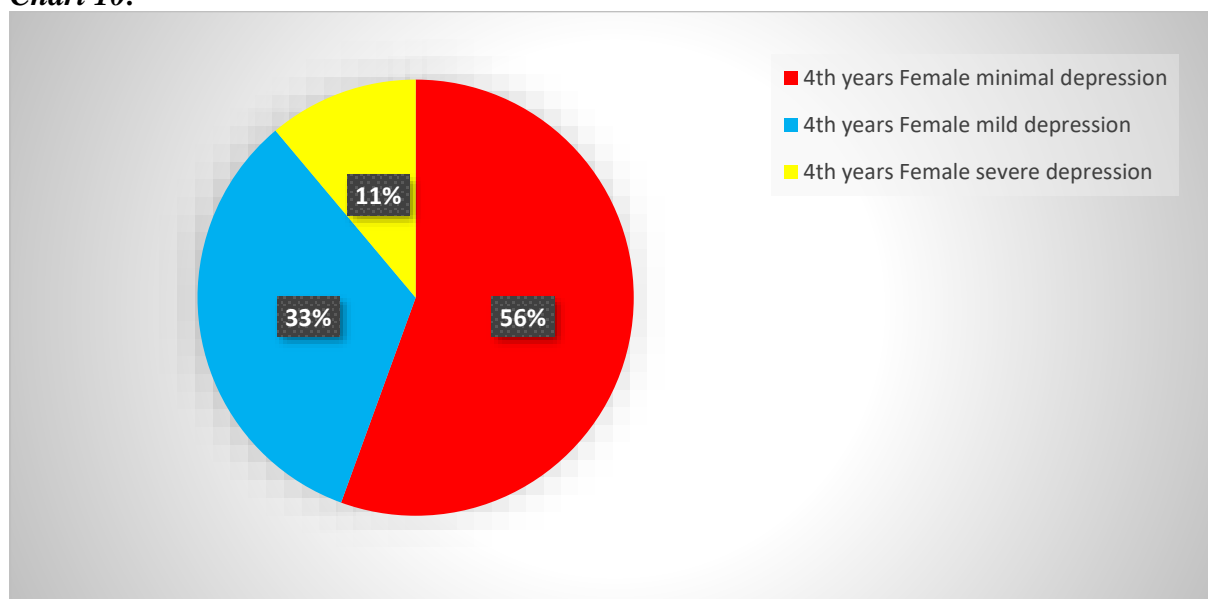


Chart 10 illustrates that out of 9 female students, 56% show minimal depression, 33% show mild depression and 11% show severe depression.

For Males:

Table 9: Fourth Year Males

Row Labels	Count of Interpretation
4th years	4
Male	
minimal depression	4
Grand Total	4

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Chart 11:

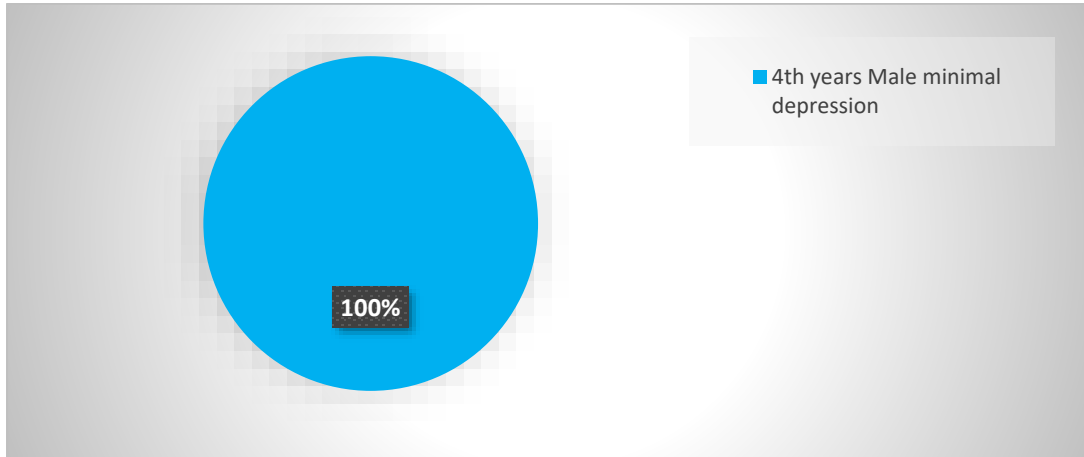


Chart 11 illustrates that all men show minimal depression.

INTERN BATCH:

This batch consists of 29 students. Out of which 25 are female students and 4 are male students.

For Females:

Table 10: Intern Batch Females

Row Labels	Count of Interpretation
Interns	25
Female	
minimal depression	18
mild depression	4
moderate depression	2
severe depression	1
Grand Total	25

Chart 12:

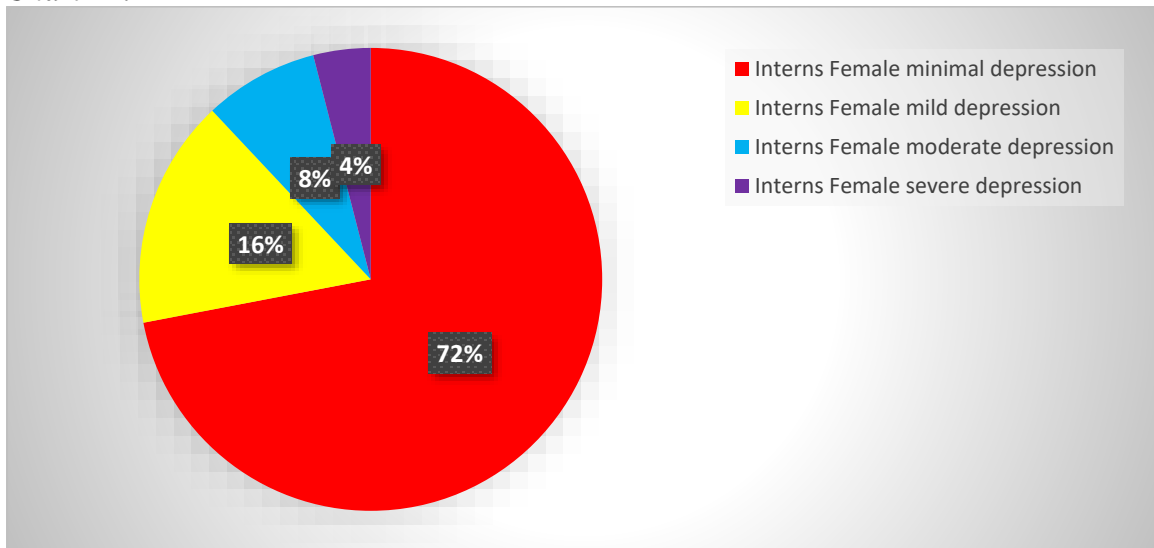


Chart 12 illustrates that out of 25 female students, 72% show minimal depression, 16% show mild depression, 8% moderate depression and 4% show severe depression.

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For Males:

Table 11: Intern Batch Males

Row Labels	Count of Interpretation
Interns	4
Male	
minimal depression	4
Grand Total	4

Chart 13:

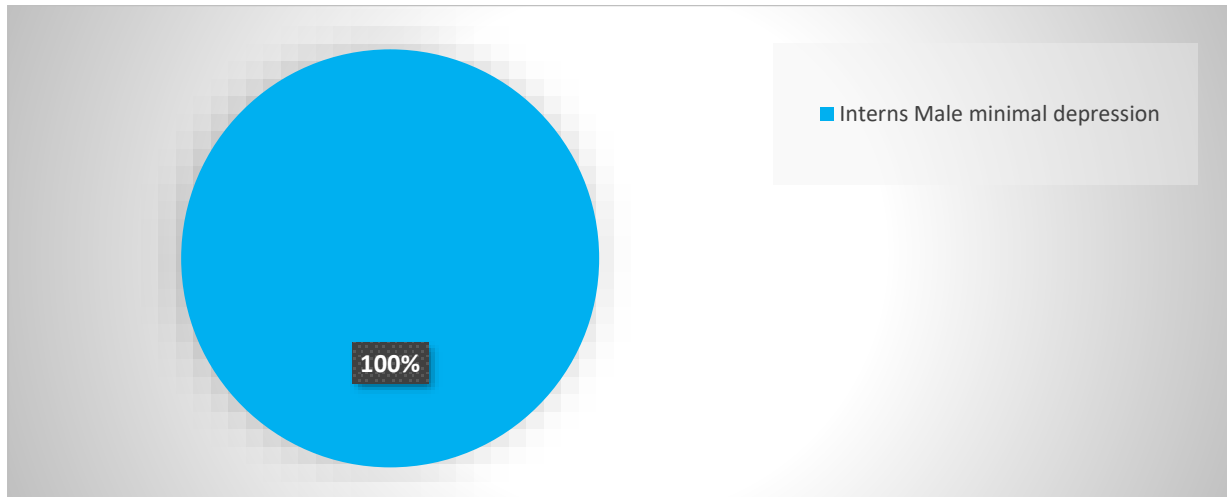


Chart 13 illustrates that all men show minimal depression.

DISCUSSION

The study is done to assess the presence of depression in undergraduate physiotherapy students using Beck's Depression Inventory – ii. The interview-based study was done in which the students had to fill the questionnaire which was handed over to them. 156 students participated in the study. The age of participants was between 19 to 25 years. Out of 156 participants, 120(77%) were Female students and 36(23%) were Male students according to *Chart1*. 3 students were excluded from the study as they were clinically pre-diagnosed with depression. Out of 153 students 65% have minimal depression, 16% have mild depression, 12% have moderate depression and the remaining 7% have severe depression as shown in *Table1* and *Chart3*.

As mentioned earlier, in Beck's Depression Inventory – ii, the scores which are more than 20 show significant depression. This means the ones in moderate and severe depression.

1st year odd batch is a repeaters batch where students have been there for more than a year either due to keep term (KT) or have a backlog. Out of 153, 4% (6) *Chart2*, are 1st year students from which 4 are female students while 2 are male students from *Table2* and *Table3* respectively. According to *Chart4*, 25% have minimal depression, 25% have mild depression and 50% of female students have severe depression. On the other hand, as seen in *Chart5*, all male students have minimal depression.

2nd years consists of 55 students in total i.e. 35% from total *Chart2*. Out of which 42 are female students and 13 are male students, *Table4* and *Table5*, respectively. According to

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Chart6 for 2nd year female students, 62% have minimal depression, 17% have mild depression, 12% have moderate depression and 9% have severe depression. On the other hand, as seen in *Chart7*, 46% of males have minimal depression, 15% have mild depression, 31% have moderate depression and 8% have severe depression.

3rd years consists of 50 students in total i.e. 32% from total *Chart2*. Out of which 37 are female students and 13 are male students, *Table6* and *Table7*, respectively. According to *Chart8* for 3rd year female students, 68% have minimal depression, 13% have mild depression, 16% have moderate depression and 3% have severe depression. On the other hand, as seen in *Chart9*, 69% of males have minimal depression, 16% have mild depression and 15% have moderate depression.

2nd year and 3rd year students have undergone 2 years of studies during COVID-19 and hence have undergone psychological problems. Even though blending learning (i.e. combination of one-on-one studies and E-learning/Online Learning) has shown positive feedback among students, they still prefer traditional learning as the students tend to miss Teacher interaction, Peer interaction, Travelling and On-campus life ^[20] which is what all students look for in a college.

4th years consists of 13 students in total i.e. 9% from total, *Chart2*. This batch has a smaller number of students as this is also a repeaters batch. During COVID-19, a complete casual batch was affected. Hence, these are the students who have keep term (KT) or have a backlog. Out of these 13 students 9 are females and 4 are males, *Table8* and *Table9*, respectively. According to *Chart10* for 3rd year female students, 56% have minimal depression, 33% have mild depression and 11% have severe depression. On the other hand, as seen in *Chart11*, all male students have minimal depression.

Intern Batch consists of 29 interns in total i.e. 20% from total, *Chart2*. Out of these, 25 interns are females and 4 are males, *Table10* and *Table11*, respectively. According to *Chart12* for female interns, 72% have minimal depression, 16% have mild depression, 8% have moderate depression and 4% have severe depression. On the other hand, as seen in *Chart13*, all male interns have minimal depression.

Overall female students are showing higher prevalence of depression. This is because the number of female participants is more than the male participants, as shown in *Chart1*. In general, studies have shown that females are more prone towards depression.^[21] A study that took place in Pakistan showed higher prevalence of depression in females than in males due to their nature of being over concerned, higher self-expectations and lack of competency to report any symptom.^[22]

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Conflict of Interest

The author declared no conflict of interests.

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