



# “DEPRESSION, ANXIETY AND STRESS AMONG UNDERGRADUATE AND POST GRADUATE PHYSIOTHERAPY STUDENTS – A CROSS SECTIONAL STUDY”

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## **ABSTRACT**

**Title:** “DEPRESSION, ANXIETY AND STRESS AMONG UNDERGRADUATE AND POST GRADUATE PHYSIOTHERAPY STUDENTS – A CROSS SECTIONAL STUDY”

**Background & Purpose:** The mental health of college/university going students is an area of increasing concern worldwide. The objective of this study is to examine the prevalence of depression, anxiety and stress among the students of SPB physiotherapy college, surat.

**Method:** A Descriptive cross sectional study was conducted in SPB physiotherapy college, Surat, Gujarat, India among undergraduate and postgraduate physiotherapy students. Total duration of study was \_ months. Data was collected from 222 students; more than half were female students 90.9%. They were selected through random sampling technique. A self administered standardized DASS 21 scale(using Google form) was used to collect data and result was analysed using it's severity rating index. Data was entered and analysed by using Microsoft Excel. The descriptive statistics including the frequency of depression, anxiety, stress and demographic characteristics of the participant was collected.

**Result:** The mean age of students was  $20.49 \pm 1.75$  years. The frequency of depression, anxiety and stress found among physiotherapy students of both undergraduate and postgraduate courses was 27.03%, 42.34% and 15.77% respectively.

**Conclusion:** The result of present study concludes that depression, anxiety and stress among physiotherapy students were present in 27.02%, 42.34%, and 15.76%, respectively among undergraduate and post graduate physiotherapy students of SPB Physiotherapy college. Consequently it is proposed that this physiotherapy institute could take appropriate steps for prevention of these psychological symptoms.

**Key words:** Anxiety, Stress, Depression, Physiotherapy students, DASS-21

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## INTRODUCTION

Psychological morbidities are most common psychiatric health problem worldwide. [1] College students' mental health plays a very important role in their success and persistence at their institution. [2] When the students can manage their anxiety, they feel less pressure. If the students remain anxious, they may not follow through with their academic studies. Also, anxiety could complicate their physical and psychological states and persist after graduation, and it may negatively affect their capacity to work in the future. [3] Stress during education can lead to mental distress and have a negative impact on cognitive functioning and learning. [4] According to WHO, depression is a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy and poor concentration. [5]

Stress is defined as a state of psychological and physiological imbalance resulting from disparity between situational demand and the individual's ability and motivation to meet those needs. It is an innate response of the body that may be physical, mental or emotional to an unforeseen event that occurs in the life of an individual. [6] Stress has both physical & emotional effects & can create positive or negative feelings, where positive feelings can be beneficial at times, producing the boost that provides the drive & energy to help people get through situations like exams or work deadlines. However, an extreme amount or negative feeling of stress can have health consequences & adversely affect the immune, cardiovascular, neuroendocrine & central nervous systems [7,8] Stress & anxiety goes hand in hand as anxiety is a response to the stress in times of threat [9] Anxiety is a term used to describe a normal feeling people experience when faced with threat, danger, or when stressed. Experiencing occasional anxiety is a normal part of life [10] Generally, academic stresses develop the sense of competition and motivation among students and encourage learning. However, sometimes this stress produces anxiety and feelings of helplessness, leading to stress-related disorders and adversely affecting academic and non-academic performance. [11].

Depression is a significant public health problem and is characterized by sadness, loss of interest in activities and by decreased energy. It is differentiated from normal mood changes by the extent of its severity, the symptoms and the duration of the disorder. [12] Depression is the fourth most important contributor to the global burden of disease and 4.4% of the total disability adjusted life years (DALY) is explained by depression. [13,14] Depression is common in university students especially it is high among

medical students with no preponderance between males and females [15,16] It may be a significant hidden problem in medical students and mechanisms to identify and help students with mental health problems should be seriously considered. [17]

Asia seems to be suffering more for DAS. A study conducted on 353 medical university students in India reported that more than half of the respondents were affected by depression (51.3%), anxiety (66.9%) and stress (53%). [18] In 2013, studies conducted in Iran reported that 38% depression among university students. [19] Another study has shown that Academics and taking exams are the most powerful stresses in medical and paramedical students.[20] Rosenthal and Okie in 2005 reported higher prevalence of psychological problems such as stress, anxiety, and depression among medical students than in the general population and age matched peers [21]

Substantial amount of literature suggests that the physiotherapy education is a demanding field and students are subjected to different kinds of stressors such as the academic demands and pressures, competition for grades, social adjustment, interpersonal and family problems, uncertainty of future, lack of leisure time, coping with the high stimulating environment of college, exams, too much work load and financial concerns, unrealistic ambitions, limited opportunities, high expectations are some of the sources of stress which create tension, fear and anxiety. [22-25]

Non-traditional college students are often employed full-time, older, and may have dependents other than their spouses [26] Thus, this group of students may have to cope with meeting work and family demands in addition to academic requirements. In these contexts, many college students may experience the persistence, exacerbation, or first onset of mental health and substance use problems while possibly receiving no or inadequate treatment. With the increasing recognition of child mental health issues and the use of more psychotropic medications, the number of young adults with mental health problems entering college has significantly increased. For example, in a survey of 274 institutions, 88 % of counselling centre directors reported an increase in “severe” psychological problems over the previous 5 years including learning disabilities, self-injury incidents, eating disorders, substance use, and sexual assaults. Thus, there is an increase in demand for counselling and specialized services. However, the increase in demands has not always corresponded to an increase in staff [27]

Recently, the medical student population is increasing every year, especially in developing countries including India. Change in lifestyle because of urbanization and globalization coupled with high-level competition in the medical field could lead to increase in stress and depression among medical students. Depression in younger age group may lead to serious developmental and functional consequences like an academic failure or persistent psychosocial problems.[28] Students who drop out of professional institutions actually do not lack intellectual ability, but emotional problems and poor motivation lead to failure. [29] Physiotherapy education is changing, and educators are increasingly concerned about the psychological problems observed in students. There is substantial amount of literature which suggests that the physiotherapy education is a demanding field and students are subjected to different kinds of stressors such as the academic demands and pressures, competition for good grades, social adjustment, interpersonal and family problems, uncertainty of

future, lack of leisure time, coping with the high stimulating environment of college, exams, too much work load and financial concerns. These stressors can affect student's learning capacity, academic output as well as their day to day adjustment process. All these stressors not only affect the academic performance of the students but also threaten their physical and psychological well being. [30-32] Recently mental health issues are becoming the focus of attention in academic setting to enhance psychological well-being and to add to capacity building. In addition to professional education of the students it is also imperative to look into the factors which maintain the quality of life of the students during the years of training. [33] Therefore, proper counseling services required to the psychological well-being of medical students to improve their quality of life [34].

A thorough literature review revealed that scanty research has been conducted to evaluate psychological morbidity in students of physiotherapy programme. However, many studies have explored the psychological problems of MBBS students, [35-37] such studies are lacking in physiotherapy students. Keeping in mind, the present study was planned and the objectives were to find out the prevalence of depression, anxiety and stress in under and post graduate physiotherapy students.

#### ➤ **NEED OF THE STUDY:**

It is of utmost importance to identify the emotional challenges students face today in higher education and recognizing students with potential or actual weaknesses. These weaknesses may include emotional instability that occurs during enrolment in a physiotherapy program at the college setting. Professional education can be a stressful experience for some individuals, and may impact negatively on emotional well-being and academic performance. All college students face challenges such as financial restraints, challenging courses, adapting to new experiences, and peer pressure.

Some studies reflect that college students in general may have a higher rate of psychopathology than the general population. Additionally, high levels of stress tend to lead to more anxiety, anger, and depression. Since health care professionals provide care to the public, early identification of these emotional problems may lead to programs directed at prevention or reduction of negative emotional states among students. Researchers have less clearly explored and defined the emotional states of physiotherapy students and how those factors affect performance. The emotional vulnerability of a significant proportion of physiotherapy students, with academic and personal issues being the greatest concern. While personal causes of stress such as stressful events and mood are more difficult to control, manipulation of curricular factors may have positive effects on academic sources of stress. Development of support services for this group is a necessity in the college and university setting.



## AIMS AND OBJECTIVES

- To know the prevalence of depression among under and post graduate Physiotherapy students.
- To know the prevalence of anxiety among under and post graduate Physiotherapy students.
- To know the prevalence of stress among under and post graduate Physiotherapy students.

## MATERIALS & METHODOLOGY

1. **STUDY DESIGN:** Cross sectional study
2. **STUDY POPULATION:** Study population is Undergraduate and postgraduate physiotherapy students of SPB physiotherapy college. (N=460)
3. **SAMPLING TECHNIQUE:** non probability sampling
4. **STUDY DURATION:** 2 and half months
5. **SAMPLE SIZE:** Total 222 students were responded to Google form
6. **STUDY SETTING:** SPB Physiotherapy College.
7. **SELECTION CRITERIA**
  - **INCLUSION CRITERIA:**
    1. Undergraduate and Postgraduate students of SPB Physiotherapy College, Surat.
    2. Willing to participate voluntarily by signing e consent.
  - **EXCLUSION CRITERIA:**
    1. Students, who have been diagnosed and are undergoing treatment by a psychologist or psychotherapist for depression, anxiety and stress.
    2. Not willing to participate.
8. **MATERIAL AND TOOLS:**
  - DASS Scale
  - Google Form
  - Mobile phones
  - Internet
  - Microsoft Excel
  - Microsoft Word
  - Google Spreadsheet

### 9. **OUTCOME MEASURE:**

- **Depression Anxiety Stress Scale 21 (DASS 21) :**

Depression, Anxiety and Stress were scaled on the DASS 21 (Depression, Anxiety and Stress Scale 21). The scale has been used and validated in several studies [38-39]. It is designed to judge the three main psychological domains namely Depression, Anxiety and Stress. The responses of all the

questions then categorised according to depression, anxiety and stress. Then total score of each were calculated. Severity of each variable was decided according to following classification.

Severity	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

## 10. PROCEDURE

Physiotherapy students of either gender were requested to participate in the study by signing the digital informed consent. They are then asked to fill all the sections of Google form which included 4 sections. First section was consent form, second section was demographic data which included the age, gender, BMI, year and course of study, type of family and annual income of the participants, third section was about history of psychological disorders and fourth section included 21 questions of DASS 21.

## STATISTICAL ANALYSIS

The participants (n=222), Physiotherapy students of SPB Physiotherapy College, Surat completed the self reported measures. Statistical analysis was conducted using Microsoft Excel. Descriptive statistics and measures of central tendencies for demographic data were evaluated. Kolmogrov smirnovz test was used to find out the normality of the data collected from the outcome measures. Pie charts were used to show the prevalence and relationships among variables.

## RESULTS

### • DEMOGRAPHICS AND DESCRIPTIVE DATA

A total of 222 undergraduate and postgraduate physiotherapy students participated in the study. Mean age of participants was 20.46 years. Around 202 (90.9%) students were female and 20 (9.01%) were male. Table 1 shows the demographical data.

**Table- 1****Characteristics of undergraduate and postgraduate physiotherapy students (n=222)**

Sr.	Variable	N	%
1	Age	20.47 (SD = 1.75 )	
2	Gender		
	Male	20	9.01
	Female	202	90.99
3	Year of Study (BPT)		
	First Year	47	21.17
	Second Year	50	22.52
	Third Year	31	13.96
	Final Year	30	13.51
	Intern	45	20.27
4	Year of Study (MPT)		
	First Year	14	6.31
	Second Year	5	2.25

- **PSYCHOLOGICAL VARIABLE SCORES OF PARTICIPANTS**

DASS-21 questionnaire was used to collect the frequency of depression, anxiety and stress. Data were interpreted as, among 222 participants, Depression symptoms were absent in 162 (72.97%) while they present in 60(27.03%) physiotherapy students. Among them 21 (9.46%) involved mildly, 25 (11.26%) moderately, 6 (2.7%) severely and 8 (3.6%) physiotherapy students involved very severely.

Anxiety symptoms were absent in 128 (57.66%) while they present in 94(42.34%) physiotherapy students out of 222. Those who had anxiety been categorized as, students with mild anxiety were 30 (13.51%), moderate 34 (15.31%), severe 15 (6.76%) and very severe were 15 (6.76%).

Similarly stress symptoms were absent in 187 (84.23%) while they present in 35 (15.77%) physiotherapy students out of 222. physiotherapy students. Involved students categories according to DASS 21 ranking criteria, those students who mildly involved in stress are 17 (7.66%), moderate are 12 (5.4%), severe are 4 (1.8%) and very severe are 2 (0.9%) (Table2,3).

It was observed that Depression, anxiety and stress among physiotherapy students were 27.02%, 42.34%, and 15.76%, respectively. They were calculated through adding all the categories like mild, moderate, severe and very severe of each of the variable (i.e. DASS). Depression, anxiety and stress scores were higher among female students (Table 3). The graphical representation of following data is as shown in Figure 1, 2 &3.

**Table- 2****Frequency of psychological morbidities using Dass-21 (n=222)**

Sr.	Tool	Category	Percentage(%)	Frequency(n)
1	DASS (Depression)	Normal	72.97	162
		Mild	9.46	21
		Moderate	11.26	25
		Severe	2.70	6
		Very Severe	3.60	8
2	DASS (Anxiety)	Normal	57.66	128
		Mild	13.51	30
		Moderate	15.31	34
		Severe	6.76	15
		Very Severe	6.76	15
3	DASS (Stress)	Normal	84.23	187
		Mild	7.66	17
		Moderate	5.40	12
		Severe	1.80	4
		Very Severe	0.90	2

**Table-3****Severity distribution of DASS 21 scores (%) among undergraduate and postgraduate physiotherapy students**

Subscale		Normal	Mild	Moderate	Severe	Very Severe
<b>Depression</b>						
	All	72.97	9.46	11.26	2.7	3.6
	Male	85	10	5	0	0
	Female	71.78	9.4	11.88	2.97	3.96
<b>Anxiety</b>						
	All	57.66	13.51	15.31	6.76	6.76
	Male	70	10	15	5	0
	Female	56.43	13.86	15.35	6.93	7.42
<b>Stress</b>						
	All	84.23	7.66	5.4	1.8	0.9
	Male	95	0	5	0	0
	Female	83.17	8.41	5.44	1.98	0.99
<b>Males n=20, Females n=202</b>						



**Table- 4****Frequency of psychological morbidities using Dass-21 among BPT students (n=203)**

Sr.	Tool	Category	Percentage(%)	Frequency(n)
1	DASS (Depression)	Normal	72.91	148
		Mild	9.85	20
		Moderate	10.84	22
		Severe	2.46	5
		Very Severe	3.94	8
2	DASS (Anxiety)	Normal	58.62	119
		Mild	13.79	28
		Moderate	14.78	30
		Severe	7.39	15
		Very Severe	5.42	11
3	DASS (Stress)	Normal	84.73	172
		Mild	7.88	16
		Moderate	4.93	10
		Severe	1.48	3
		Very Severe	0.98	2



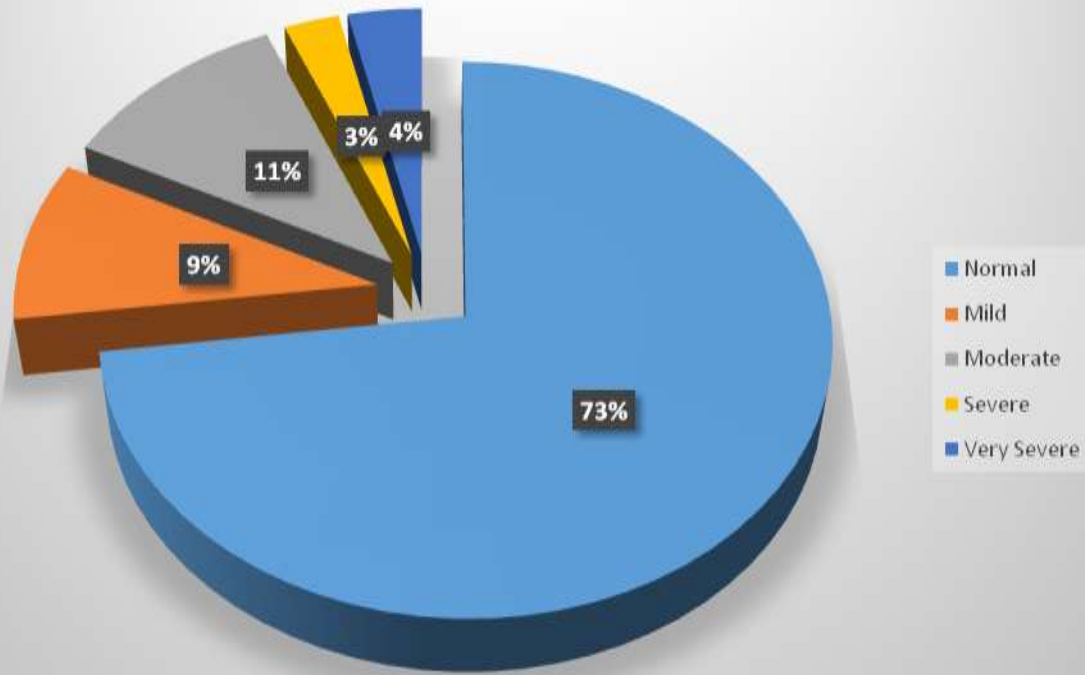
Table- 5

## Frequency of psychological morbidities using Dass-21 among MPT students (n=19)

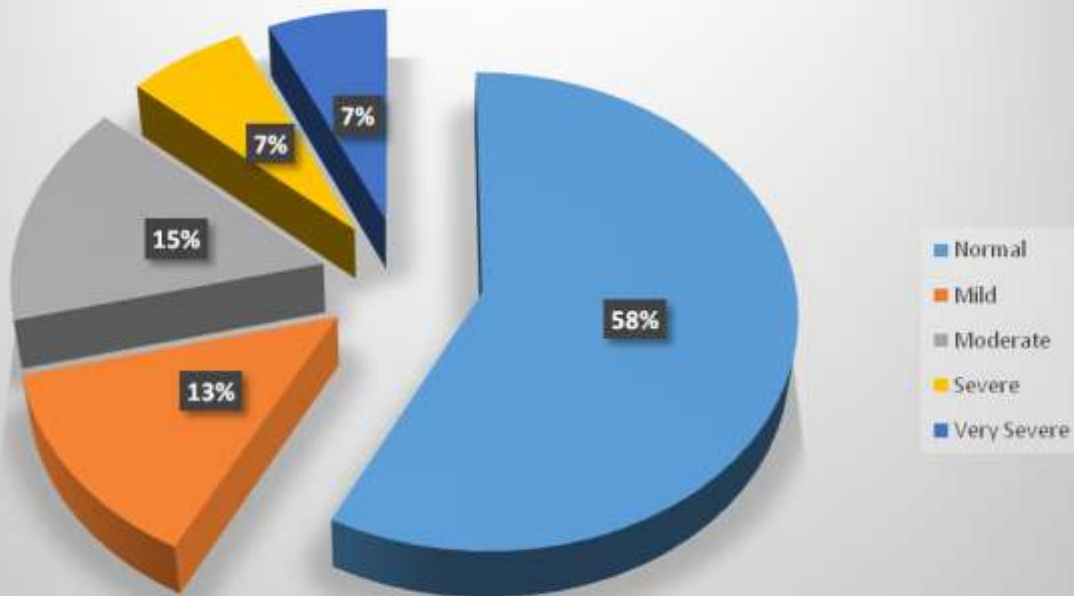
Sr.	Tool	Category	Percentage(%)	Frequency(n)
1	DASS (Depression)	Normal	73.68	14
		Mild	5.26	1
		Moderate	15.79	3
		Severe	5.26	1
		Very Severe	0	0
2	DASS (Anxiety)	Normal	47.37	9
		Mild	10.53	2
		Moderate	21.05	4
		Severe	0	0
		Very Severe	21.05	4
3	DASS (Stress)	Normal	78.95	15
		Mild	5.26	1
		Moderate	10.53	2
		Severe	5.26	1
		Very Severe	0	0

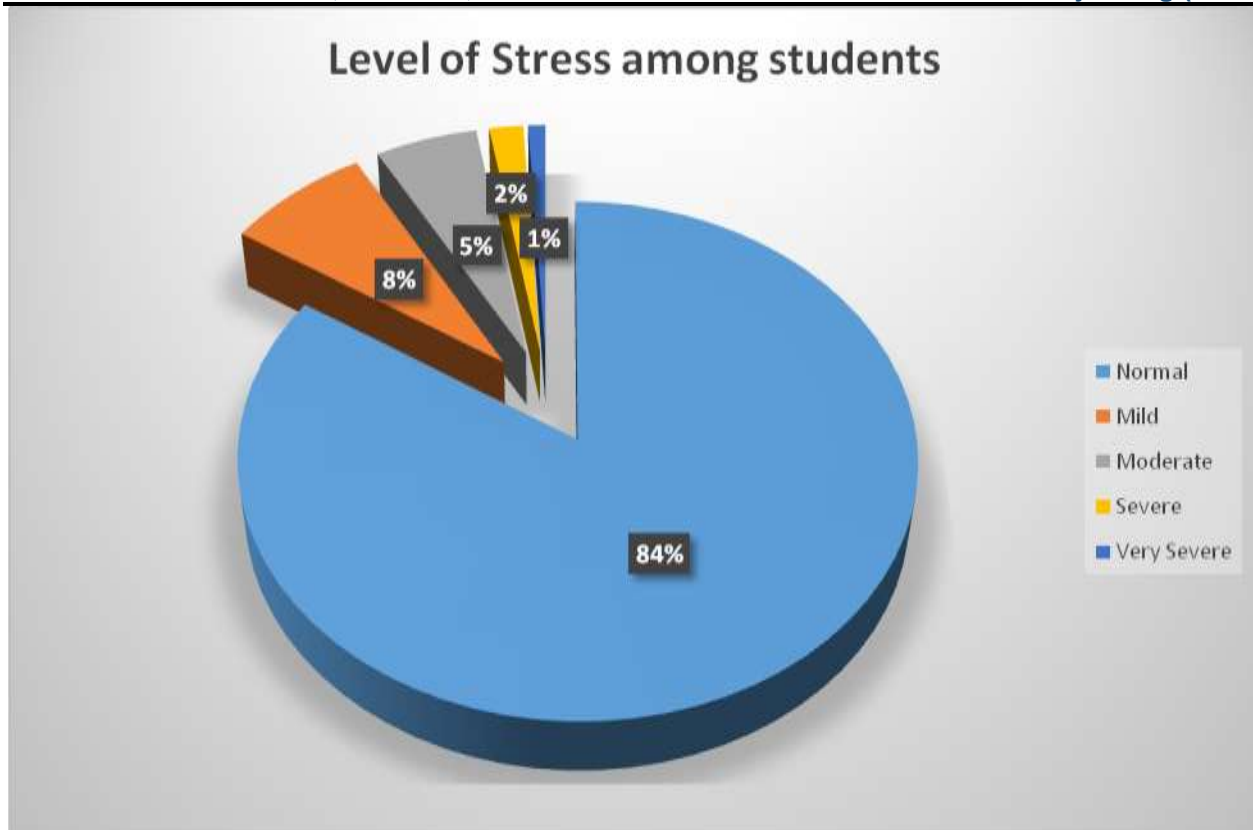


### Level of Depression among students



### Level of Anxiety among students





## DISCUSSION

The study was carried out to find out prevalence of depression, anxiety and stress among undergraduate and postgraduate physiotherapy students. In this study, a total of 222 students participated from both UG and PG course. Our study shows that majority of the students, 74.32% were in the age group of 19 - 22 years old.

Out of 222 participants, 60 participants were categorised from mild depression to moderate depression. Among that 60 participants, 21 participants scored between 10 – 13 that is categorised as mild depression, 25 participants scored between 14 – 20 that is categorised as moderate depression, 6 participants scored between 21 – 27 that is categorised as severe depression and 8 participants scored between 28+ that is categorised as very severe depression.

Out of 222 participants, 94 participants were categorised from mild anxiety to moderate anxiety. Among that 94 participants, 30 participants scored between 8 – 9 that is categorised as mild anxiety, 34 participants scored between 10 – 14 that is categorised as moderate anxiety, 15 participants scored between 15 – 19 that is categorised as severe anxiety and 15 participants scored between 20+ that is categorised as very severe anxiety.

Out of 222 participants, 35 participants were categorised from mild stress to moderate stress. Among that 35 participants, 17 participants scored between 15– 18 that is categorised as mild stress, 12 participants

scored between 19 – 25 that is categorised as moderate stress, 4 participants scored between 26 – 33 that is categorised as severe stress and 2 participants scored between 34+ that is categorised as very severe stress.

The prevalence of depression is 27.03%, of anxiety 42.34% and stress is 15.76%. Prevalence in female students for depression is 28.22%, for anxiety is 43.56% and for stress is 16.83%. Prevalence in male students for depression is 15%, for anxiety is 30% and for stress is 5%. It is also seen that prevalence is more in female students compared to male students.

The amount of depression, anxiety and stress in undergraduate and post graduate physiotherapy students could have been due to variety of reasons. However, this study could not find out the cause of high stress amongst these students. Different contributing factors for this high stress could be physical factors, academic factors, social factors, emotional factors, personality factors, limited use of coping styles etc. Tracy Stecker<sup>16</sup> found that, the stress varies with in particular coping styles such as expressive coping style (complaining, crying, being alone, altering sleep patterns and rationalizing), a cognitive coping style (problem solving, not thinking about problems and looking at the big picture), an escapist style (yoga, watching TV or movies, altering sleep and eating habits), a social support style (talking with friends and family and exercising), and a hedonistic style (using drugs & alcohol, sex, humor and sports).

The amount of depression, anxiety and stress in an academic level did not vary as per the gender and this could be due to the same level of education, training, institutional environment and other common factors responsible for the DAS. Even DAS in male and female students across the same and other academic levels did not vary significantly. It may be due to biological factors and environmental factors such as gender specific habits, common rooms, hostels etc.

The percentage of DAS observed in first, fourth and internship academic levels could be possibly due to arrival of new first year students at physiotherapy institute who were weaker in their academic performance prior to beginning of their training, new change in their educational training, transitional changes due to transfer from junior college to professional institute and getting adjusted to the people and place. In fourth year it could be due to their increased self study hours, aspirations of scoring more marks in this academic level of training since at few places aggregate of percentage of marks scored in all four years is considered for admission to postgraduate courses as well as for placement purposes and due to this fourth year BPT academic level is perceived as final chance of scoring higher percentage in addition to this there is no carry over for failed subjects and hence possibility of losing one term, change in the curriculum level that mainly focuses on physiotherapy management of various patients. Surprisingly, there was also more stress in intern students and this could be possibly due to their aspirations about job or postgraduate studies and new responsibilities of treating the patients under supervision as well as independently.

Consequently it is proposed that this physiotherapy institute could take appropriate steps for prevention of undue DAS and thereby problems related to DAS for undergraduate and postgraduate physiotherapy institute especially for the students who enter with DAS with a program that educates these students on awareness about the DAS, coping styles and individual sessions focusing on the practice of coping strategies for identified vulnerable students. Since this study suggests the fact that physiotherapy training is highly stressful the next step is to begin systematic follow up of this study over next few years so as to find out if the stress varies over the period of time in same students, whether it is related to their



academic performance in internal examinations, final university examinations, nonacademic factors, coping styles used,

develop systematic interventions and these could be explored in future investigations.

## **LIMITATION AND FUTURE SCOPE OF THE STUDY**

### • **LIMITATIONS**

1. It was a single center study
2. Male participants were less
3. Less sample size

### • **FUTURE SCOPE OF THE STUDY**

1. Study can be carried out at multiple centers.
2. Study can be done with equal ratio of male and female
3. Study can be done with large sample size

## **CONCLUSION**

The result of present study concludes that depression, anxiety and stress among physiotherapy students were present in 27.02%, 42.34%, and 15.76%, respectively among undergraduate and post graduate physiotherapy students of SPB Physiotherapy college. Consequently it is proposed that this physiotherapy institute could take appropriate steps for prevention of these psychological symptoms.

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