

Prevalence of Psychological Stress among Undergraduate Medical Students in PCMC Pune: A Cross Sectional Study

Mayura P. Deshmukh¹, Tushar J. Palekar², Gaurang Baxi³

¹Assistant Professor, Dr. D. Y. Patil College of Physiotherapy, Pimpri, Pune.

²Professor & Principal, Dr. D. Y. Patil College of Physiotherapy, Pimpri, Pune

³Professor, Dr. D. Y. Patil College of Physiotherapy, Pimpri, Pune

Corresponding Author: Mayura P. Deshmukh

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ABSTRACT

Stress being the specific response of the body to any internal and external stimuli is unavoidable and can affect one's life to different extent depending upon the type and extent of stress. In undergraduate level of medical profession there are various factors which can affect mental as well as physical health of the student such as sudden change in environment, academic overload, extracurricular performance, peer pressure, parent pressure etc. By identifying its symptoms, hopefully these conditions among medical students can be identified at an early stage to prevent psychological morbidity among medical students and young doctors. There is a need for the counseling services to be made available to the students in the medical college to control this morbidity hence the need of the study. 200 medical students were identified and assessed for stress using Perceived Stress Scale in which score equal or more than 28 is considered as positive for psychological stress. Results showed differences in stress level from first year to final year ranging from 0.5 % to 58% when classified into no stress to mild, moderate, sever category. In conclusion the prevalence of psychological stress among medical students was high (49.5%) in this study. Most females having higher level than males. Students of second year were having the highest incidence of stress

Key Words: Stress, Psychological stress, Undergraduate Medical students, Perceived stress scale.

INTRODUCTION

Stress is a specific, unavoidable response of human body to any external or internal nonspecific demands. External factors are related to environment whereas internal factors are the perceptions that cause anxiety, discomfort and other negative emotions¹. It can be defined as a feeling of strain and pressure which is a complex process of adaptation and can varies from person to person^(1,2).

Stress can be vaguely classified into positive stress and negative stress. Positive stress may be desired, beneficial and healthy that improves one's performance in terms of physical activity, mental ability, and

perfection. Positive stress plays an important role in motivation, adaptation, and reaction to the environment whereas negative stress may result into Tension, Depression, de motivation, inferiority followed by bodily harm in terms of Acidity, Anorexia nervosa, Bulimia, Weight gain, weight loss and many more^(2,3,4).

When an individual experience stress specially a Negative stress then it can be the result of his/her thinking of the demands being placed on them exceeding their ability to cope or to fulfill the task. Likewise each and every human being experiences stress or perceive things as threatening when they do not believe that

their resources for coping with obstacles such as stimuli, people, situations etc are enough for what the circumstances demands^(3,4). There are different types of stresses, such as

Time stress related to time management. When person worries about number of things that he/ she has to do and he/she fears to fail in it because of lack of time management. The person may feel Trapped, Unhappy, and/ or Hopeless. Common examples of time stress include worrying about deadlines or rushing to avoid being late for a meeting.

Anticipatory Stress Anticipatory stress describes stress that one experiences concerning the future. Sometimes this stress can be focused on a specific event, such as an upcoming presentation before a committee or mass. However, anticipatory stress can also be vague and undefined, such as an overall sense of dread about the future, or a worry that "something will go wrong."

Situational Stress when facing a scary situation thinking one have no control on it the situational stress occurs this could be an emergency.

Encounter Stress Encounter stress revolves around people. Encounter stress can be experienced by an individual while interacting with certain person or group of people^(4,5).

In addition to types of stress there are various stress factors, 1) **Physical** such as Trauma, intense physical labour, over exertion. 2) **Psychological** such as Emotional, Cognitive, perceptual, 3) Relationship difficulties, Lack of social support comes under **Psychosocial** Factors and 4) **Psychospiritual** includes crisis of values, meaning, and purpose; joyless striving etc^(5,6).

The stress response or "stress reactivity" is triggered by various stressors, ranging from live events to daily hassles and including chronic stressors. These stressors need to be identified⁽⁷⁾

Factors Causing Stress In Undergraduate Students can be explained under various domains amongst which

academic pressure and stress are most important. Academic stress results into poor performance, inferior complex, loss of confidence etc. Second most important and crucial to manage is Dating stress. This could happen in undergraduate students throughout high school and college life and is filled with thinking of dating and getting dumped. Environmental change is one of the reasons for stress amongst undergraduate students due to change in educational atmosphere. Sometimes in order to prove in Extracurricular activities such as choirs, clubs, sports volunteer work gives negative stress to students. Like dating peer relationship can provide stress or distress because peers can apply pressure in regard to dress, behavior, choice of friends or music, and many other areas of life, that pressure can become a huge cause of stress on students. Workload and time management are another important stressors for increasing stress in student population. In addition to all above parental pressure is most important stressor which needs to be nullify by parents side. Parental pressure to get good marks, good rank, achievements in extracurricular activities gives students extra burden resulting in stress related complications^(5,6).

Medical school is recognized as a stressful environment that often exerts a negative effect on the academic performance, physical health and psychological well being of the student⁽⁶⁾.

These students are expected to learn and master a huge amount of knowledge and skills often subjecting them to stress⁽¹⁴⁾ This stress has serious consequences which may lead to the development of depression and anxiety'.¹⁵ High level of stress may have a negative impact on mastery of the academic curriculum. It can also have a negative impact on cognitive functioning and learning.⁽²⁾ Failure to detect these disorders unfortunately leads to increase psychological morbidity with unwanted effects throughout their careers and lives.^[17] Early detection of psychological problems shortens the duration of an episode and

results in far less social impairment in the long term. It is therefore important to be aware of the symptoms of psychological stress in physiotherapy students, especially those which are significantly associated with depression in order to facilitate early detection and treatment of these problems (8,9,10).

It is important for educators to pay attention and know the prevalence and causes of student stress, which not only affects the health but also their academic achievement at different times of their study period (4,5)

Various scales are available to determine the stress amongst population such as the standard stress scale, effort-reward imbalance scale, Kessler psychological distress scale; The undergraduate stress questionnaire; - Chriss, General health questionnaire, Perceived Stress Scale(Sheldon Cohen)etc (12,14).

Perceived Stress Scale(Sheldon Cohen) comprises of 14 questions with responses varying from 0 to 4 for each item and ranging from never, almost never, sometimes, fairly often and very often respectively on the basis of their occurrence during one month prior to the survey (12). It assesses the degree to which participants evaluate their lives as being stressful during the past month. PSS-14 scores are obtained by reversing the scores on four positive items, for example 0 = 4, 1 = 3, 2 = 2, etc. and then summing across all 14 items (12)

Items 4, 5, 6, 7, 9, 10, 13 are the positively stated items¹². The scale yielded a single score with high scores indicating higher levels of stress and lower levels indicating lower levels of stress. The PSS-14 has a possible range of scores from 0 to 56. A score of 28 and above is considered positive for stress (12)

MATERIALS & METHODOLOGY

After approval of the institutional ethical committee a cross sectional study was done with Aim to estimate the prevalence of psychological stress and among undergraduate medical students on 200 subjects using Perceived Stress Scale. After assuring the confidence of subjects the perceived stress scale questionnaire was given to them and explained to mark the best possible options given below the questions.

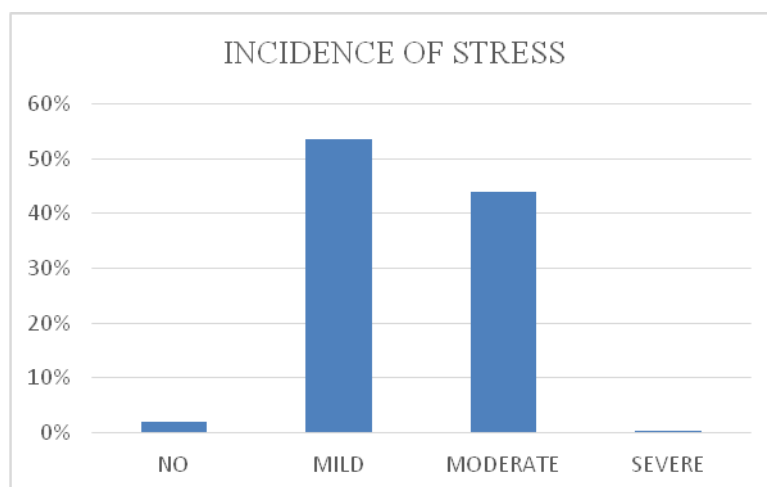
The perceived stress scale - Total scores of 28 and above is considered to be positive for psychological stress.

Classification	Score
No	0 - 13
Mild	14 - 27
Moderate	28 - 41
Severe	42 - 56

Data Analysis

Table 1 -

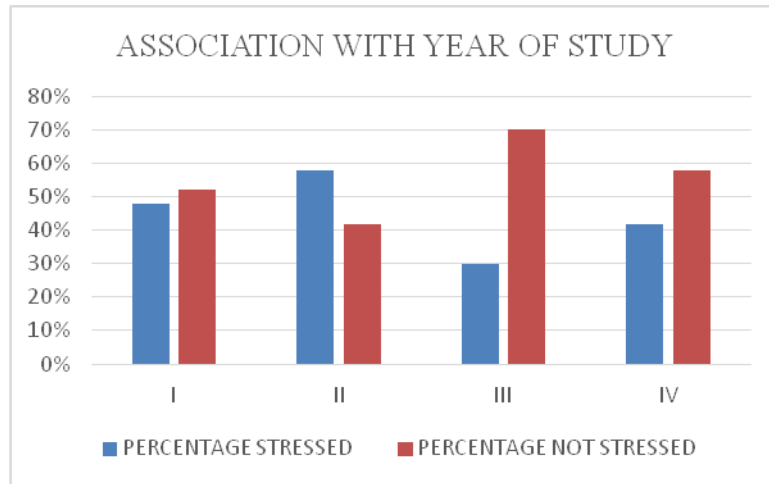
STRESS LEVEL	NUMBER	PERCENTAGE
NO	4	2%
MILD	107	53.50%
MODERATE	88	44%
SEVERE	1	0.50%



GRAPH 1 - INCIDENCE OF STRESS

Table 2

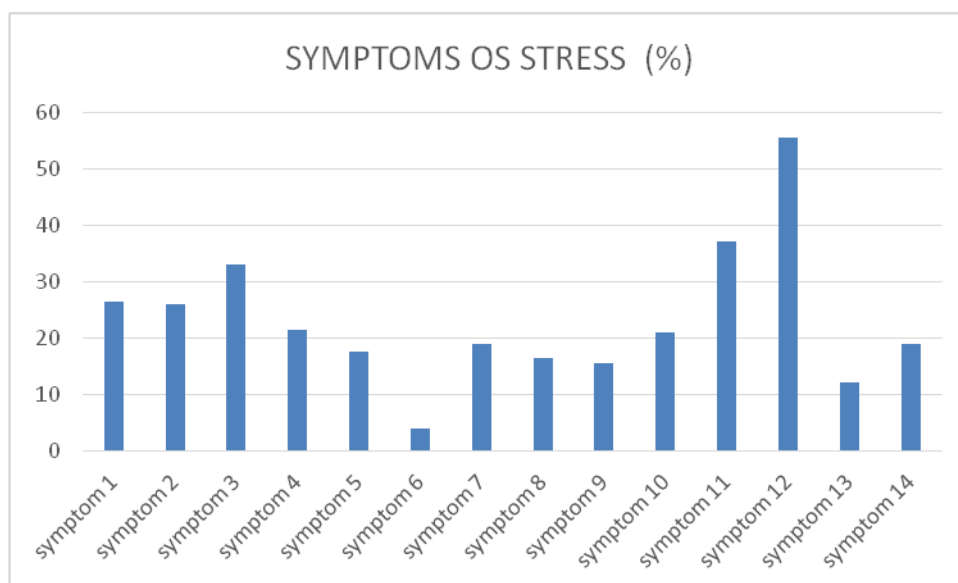
YEAR OF STUDY	STRESSED	PERCENTAGE STRESSED	NOT STRESSED	PERCENTAGE NOT STRESSED
I	24	48%	26	52%
II	29	58%	21	42%
III	15	30%	35	70%
IV	21	42%	29	58%



Graph 2 - Association of Stress with Year Of Study

Table 3

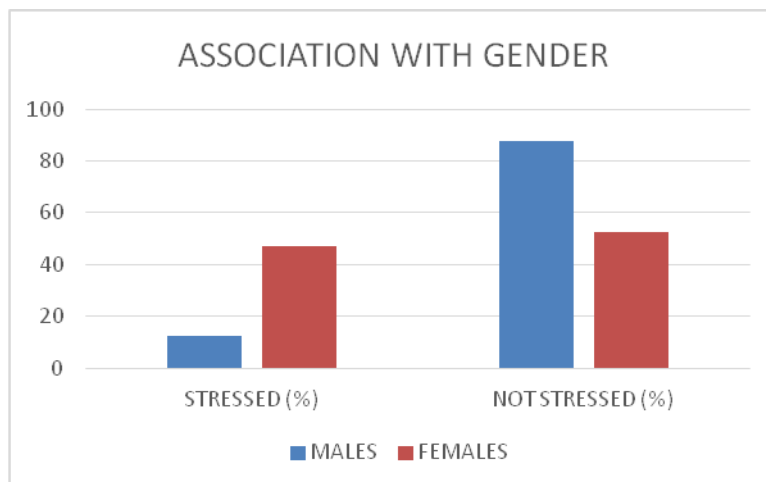
No	SYPMTOMS OF PSYCHOLOGICAL STRESS	NUMBER (200)	Percentage (%)
1	Been upset because of something that happened unexpectedly	53	26.5
2	Unable to control the important things in your life.	52	26
3	Felt nervous and stressed.	66	33
4	Dealt successfully in dealing with irritating life hassles.	43	21.5
5	Effectively coping with important changes that were occurring in your life.	35	17.5
6	Confident about your ability to handle your personal problem.	8	4
7	Things were going your way.	38	19
8	Could not cope with all the things that you had to do.	33	16.5
9	Able to control irritations in your life.	31	15.5
10	You were on top of things.	42	21
11	Angered because of things that happened that were outside of your control.	74	37
12	Thinking about things that you have to accomplish.	111	55.5
13	Able to control the way you spend time	24	12
14	Difficulties were piling so high that you could not overcome them.	38	19



Graph 3 - Symptoms Os Stress

Table 2

GENDER	STRESSED (%)	NOT STRESSED (%)
MALES	12.5	87.5
FEMALES	47.282	52.717



Graph 4 - Association With Gender

Results show,

Among 200 subjects, 4 subjects (2%) were having no stress. 107 subjects (53.5%) were having mild stress. 88 subjects (44%) were having moderate stress. 1 subject (0.5%) was having severe stress. Students of the 2nd year were having higher incidence of stress, where 29(58%) out of 50 students were stressed. This was followed by students of the 1st year, where 24(48%) out of 50 students were stressed and students of final year, where 21(42%) out of 50 students were stressed. The students of 3rd year were having minimum incidence of stress where 15(30%) out of 50 students were stressed. Majority of the students were thinking about the things that they have to accomplish(55.5%) and were angered because of things that happened that were outside of your control(37%). Other common symptoms were feeling nervous and stressed (33%), unable to control the important things in your life (26%) and been upset because of something that happened unexpectedly (26.5%). Female students reported a higher level of perceived stress (47.282%) as compared to the male students (12.5%).

DISCUSSION

The student experience of today is very different to that experienced in the

1960's, 70's or 80's. Factors include: student debt, greater parental expectations, greater pressure on academic institutions and staff, and expansion of student numbers. Leaving one's family and making a new start elsewhere also contributes to stress. As many students place great value on social and familial support, a change in environment can disrupt this support and it may take some time to find adequate substitution^(15,16,17). Recent research in the UK indicates that mental health or psychological problems within student populations are as high as 40%, with most students suffering from depression or anxiety, or both. Many respondents expressed the opinion that the number of students with mental health problems was increasing and that the severity of their problems was also increasing. There was also widespread agreement that the levels of stress were very high in the student population^(16,18).

A study among Norwegian medical students by Tyssen et al found that suicidal ideation in medical school was significantly predicted by mental distress and depression'.

This study found that the prevalence of psychological stress among medical students was high (49.5%), which corresponds to the Malaysian study in which prevalence of stress is 41.9% Similar study

was conducted among medical and law students in Singapore, where the incidence of stress was 57% and 47.3% respectively⁽¹⁷⁾ Study in Mississippi university revealed that 57% of the students had high level of stress.⁽¹⁹⁾

In this study, the most common symptoms the medical students complained of were thinking about the things that they have to accomplish (55.5%) and were angered because of things that happened that were outside of your control(37%).

Malaysian study showed that the most common symptoms the medical students complained of were not feeling reasonably happy (78.8%) and problems in sleeping when worried (71.0%).The reason for the high percentage of symptoms being reported by medical students could be a result of the students' lack of awareness of symptoms of stress. However under-reporting of these symptoms could be due to ignorance on the part of the students that these symptoms are related to stress and can be treated. A larger study should be done to confirm these findings. It is also important for academic staff especially lecturers to be aware of the presence of these symptoms in their students⁽¹⁹⁾.

This study showed that stress was found to be more in 2nd year physiotherapy students than the 1st, 3rd and 4th year. Unlike studies conducted by Shawaz Iqbal et al⁽¹⁷⁾, which concluded higher level of stress in final year medical students and Marjani A et al⁽⁶⁾ where students of 1st year had higher incidence of stress.

High level of stress in 2nd years may be due to excessive load of both clinical as well as para clinical subjects as compared to only clinical subjects in the previous year.

Stress in 1st year may be due to a change in the environment and staying away from the protective umbrella of their parents for the very first time and hence the homesickness.

Stress in final years may be due to fear of not attaining the goal of being a doctor.

In present study female students reported a higher level of perceived stress (47.3%) as compared to male students (12.5%).

A similar study was carried out by Dahlin et al· Ahmadi et al, Somnath T. Salgar which showed higher level of stress among females than males. One of the possible reason for this may be due to the restrictions imposed on the woman by their family and society in a country like India or may be due to the fact that females articulate symptoms of stress, even minor ones more easily^(18,19,20).

Student distress may influence professional development and adversely impact academic performance contributing to academic dishonesty and substance abuse, and may play a role in absence from medical school. Other studies on medical school graduates also suggest that distress may negatively affect quality of patient care, patient safety, and professionalism. Students may need to be provided more time and facilities recreation and sports. Leisure activities can reduce stress in medical schools^(10,11).

Students who are prepared with more realistic expectation in their academic pursuits, coupled with stress management techniques and good social support would have an advantage in coping. The ultimate aim is to help health program including stress management to help students cope with the stress of tertiary education medical students understand what is required of them and to adapt as quickly as possible.

CONCLUSION

In conclusion the prevalence of psychological stress among medical students was high (49.5%) in this study. Most females having higher level than males.

Students of second year were having the highest incidence of stress

By identifying its symptoms, hopefully these conditions among medical students can be identified at an early stage to prevent psychological morbidity among

our medical students and young doctors. There is a need for the counseling services to be made available to the students in the medical college to control this morbidity.

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