

## Identification and Quantification of Stressors in Physiotherapy Students

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### ABSTRACT

**Introduction-** High levels of stress is seen in healthcare students. The scores for emotional exhaustion and depersonalisation are higher than normative data in the majority of clinical physiotherapy practitioners showing a risk of potential burnout. (Balogun et al., 2000) A sound mental and physical health is a prerequisite for any professional or personal achievement. **Objective-** The objectives of the study were to identify the common stressors in physiotherapy students, the perceived extent to which different stressors contribute to stress in the students and to compare the extent to which different stressors contribute to stress in undergraduate and postgraduate students. **Methodology-** 383 students from different parts of Maharashtra, Manipal and Bhopal were presented with a questionnaire consisting of two parts, the PSS-10 and a self-made questionnaire. **Results-** Out of the 383 students that participated in the study, 12.5% students had high stress levels, 78.6% had moderate stress levels and 8.9% had low stress levels. The various stressors identified were intrapersonal, interpersonal, academic, financial and environmental. Academic stress contributed to most stress in both undergraduate and postgraduate physiotherapy students. **Conclusion-** The mental health of physiotherapy students is of concern as there are a large number of students who are stressed. It is necessary to take measures to tackle the stress in these students thus promoting the betterment of their mental well-being.

**Keywords:** Stress, Stressors, Perceived Stress Scale, Physiotherapy, Undergraduate, Postgraduate

**S**tress is the reaction people may have when presented with demands and pressures that are not matched to their knowledge and abilities which challenge their ability to cope. (WHO)

Eustress is good stress or a positive form that promotes an individual to work. Distress is bad stress or when the stress becomes too much for the individual to cope with. (Waghchavare, 2013)

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## Identification and Quantification of Stressors in Physiotherapy Students

Personal and environmental events that cause stress are referred to as stressors. (Lazarus, 1990) The effects of stress depend on the interaction between the stressors, how they are perceived by the individual and the reaction to stress.

Medical education has been perceived to be challenging and stressful. Stress in healthcare students is a rising concern. There are numerous studies done in different countries that show a high level of stress in the healthcare students. (Waghchavare et al., 2013) (Tamar, 2013)

These students are subjected to greater levels of stress as compared to other professions. (Waghchavare et al., 2013) (Tamar, 2013) (Al-Dabal et al., 2010)

Distress in students hampers the learning process, the academic output of the individual and causes emotional and mental exhaustion. Thus, it reflects negatively on the academic performance of the individual as well as daily functioning. (van Vuuren et al., 2018) It is also a known cause of psychological morbidity in students and can result in low self esteem, low self confidence, and poor quality of life. (Walsh et al., 2010) Studies have found that distress is known to cause interpersonal conflicts, sleep disturbances, reduced attention span, reduced concentration, and hamper the ability of healthcare students to develop good patient care and doctor-patient relationships. (Shapiro et al., 2000) Stress is also known to cause declining empathy in these students. (Shah et al., 2010)

A large number of physiotherapy students are affected by anxiety, depression and stress. (Malani et al., 2020) Stress in association with anxiety and depression will result in the development of many physical and mental health issues in later life. (Uskun et al., 2008) Effects of chronic stress include risk of development of cardiovascular diseases, diabetes, cancers, autoimmune syndromes and mental illnesses like depression and anxiety disorders. (Mariotti, 2015) A number of poor coping strategies like isolation from friends and family, excessive sleep, smoking, missing lectures, using tranquilizers in response to stress are noted in medical students. (Attiya et al., 2007) These further cause more troubles in the academic and personal affairs of the students.

The academic curriculum of Physiotherapy students is as challenging as that of the medical and dental fields. (Tamar et al., 2013) Studies have shown that 71% undergraduate Physiotherapy students find their course difficulty was greater than expected by them. (Tucker et al., 2006) There are high academic, physical and clinical demands required from students in the Physiotherapy profession. Physiotherapy education is undergoing rapid change in terms of teaching and learning processes. (Tucker et al., 2006) Like every other healthcare field, is showing exponential increase in knowledge and newer advances in professional practice. To cope up with these advancements and maintain a good balance between professional and personal life is a challenge that the students experience.

## **MATERIALS AND METHODS**

### *Aim*

To identify the perceived extent to which different stressors contribute to stress among Physiotherapy students.

### *Objectives*

1. To identify the common stressors in physiotherapy students.

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2. To rate the perceived extent to which different stressors are contributing to stress amongst physiotherapy students.
3. To compare the extent to which different stressors contribute to stress in undergraduate and postgraduate physiotherapy students.

### *Hypothesis*

Not applicable.

### *Participants*

The study was conducted in various physiotherapy colleges across Maharashtra, Manipal and Bhopal. A total of 383, undergraduate and postgraduate physiotherapy students as well as interns participated in this cross-sectional observational study, which spanned over a period of 6 months from December 2021 to June 2022. (convenient sampling)

### *Materials*

Two materials were used for this study,

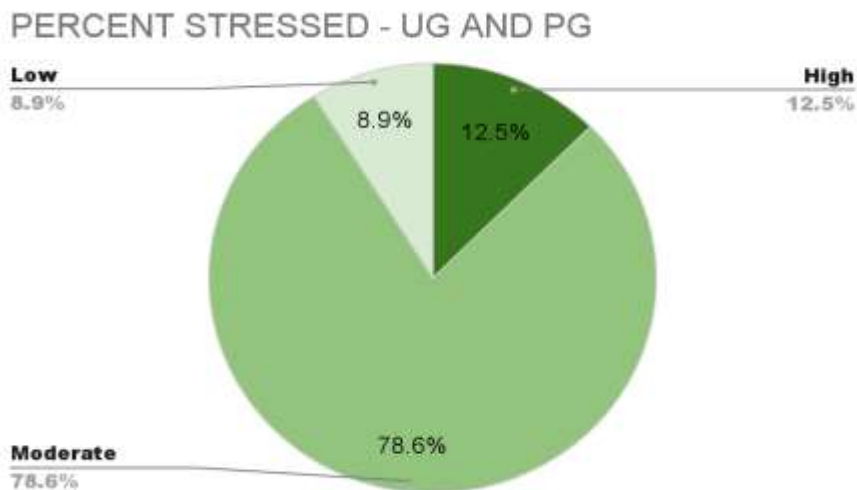
- **Perceived stress scale (PSS-10):** A 10 point perceived stress scale (PSS-10) was used. The PSS-10 is a valid and reliable stress assessment instrument. The scale has an acceptable level of internal consistency, as determined by a Cronbach's alpha of 0.731. The Spearman-Brown split-half reliability coefficient is also adequate (0.71). (Pangtey et al., 2020)The PSS-10 helps to understand how different situations affect our feelings and our perceived stress. It includes questions about one's feelings and thoughts in the last month. It has been used widely to assess the perceived stress in healthcare students.
- **Questionnaire based on pilot study:** A pilot study was conducted to identify the stressors contributing to stress in physiotherapy students. The students experiencing some extents of stress were included and were asked to enlist the factors that contributed to their stress. From the pilot study the list of stressors thus generated was regrouped into 5 main stressors namely intrapersonal, interpersonal, academic, financial, environmental.

### *Procedure*

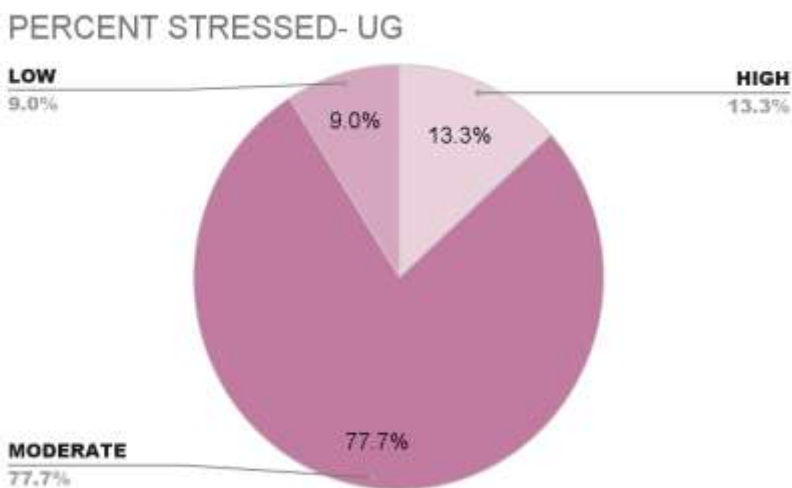
This was a questionnaire based cross-sectional study. A google form was made including the PSS-10 and the stressors that were identified based on the pilot study. The form was circulated via e-media as well as physically. Participation was voluntary and all students' consent was taken. Students with any chronic musculoskeletal, neurological, cardiovascular, metabolic, psychological or other illnesses who were under medical treatment for the same were ruled out from the study. The initial part of the form consisted of PSS-10. In the subsequent part of the form the students were asked to grade the stressors on a scale of 0-10, 0 meaning no stress and 10 meaning highest level of stress felt. A total of 465 responses were received of which only 383 students fit the inclusion criteria and the other 82 were excluded. After collecting the responses, the responses of 4 positively stated items ( 4,5,7,8 ) were reversed and the total scores were calculated. The level of stress perceived by the students was graded as per the PSS-10 scoring, that is, 0-13 as low, 14-26 as moderate and 27-40 as high. A descriptive analysis of data was done to identify the perceived extent to which different stressors contribute to stress in the students. For the stressors, a mean and standard deviation was calculated for comparison among them. There were no risks involved during the study. Also, there were no costs associated with participating in the study.

**RESULTS**

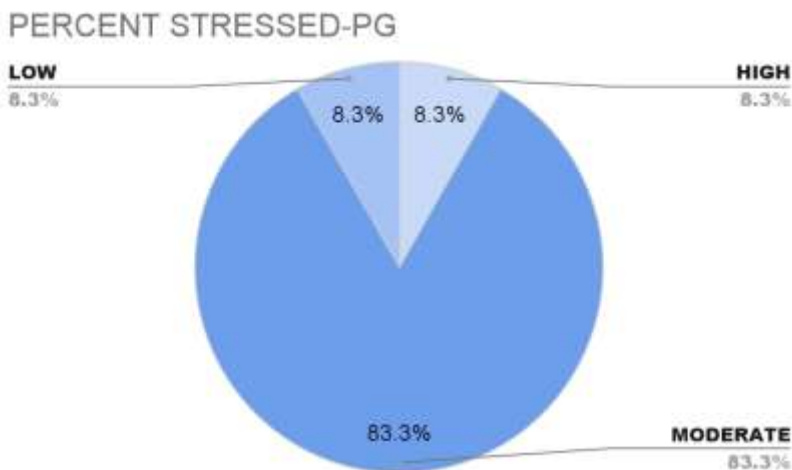
*Pie chart no.1 Distribution of stress among all the participants.*



*Pie chart no.2 Distribution of stress among UG students.*



*Pie chart no.3 Distribution of stress among PG students.*

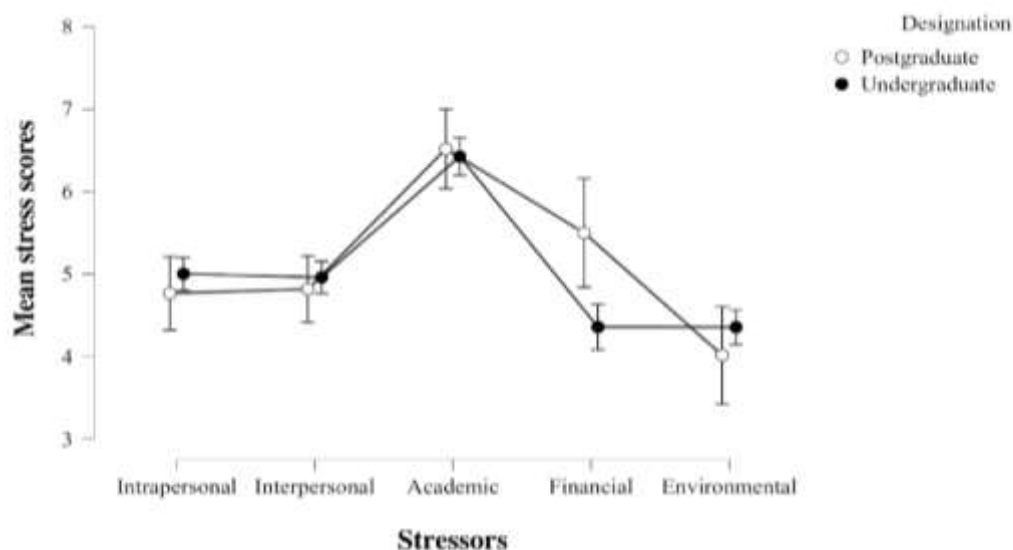


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**Table no.1: Descriptive statistics for stressors in undergraduate and postgraduate physiotherapy students.**

	Intrapersonal		Interpersonal		Academic		Financial		Environmental	
	UG	PG	UG	PG	UG	PG	UG	PG	UG	PG
Valid	323	60	322	60	323	60	323	60	322	60
Mean	5.003	4.767	4.960	4.817	6.424	6.517	4.359	5.500	4.356	4.017
Std.deviation	2.422	2.205	2.510	2.143	2.761	2.652	3.123	3.149	2.659	2.684

**Graph no.1 Descriptive plot for comparison of the means of stressors in undergraduate and postgraduate physiotherapy students.**



### DISCUSSION

The study focuses on the mental well-being of undergraduate and postgraduate physiotherapy students. Total 383, 323 undergraduate and 60 postgraduate students participated in this study.

Pie chart 1 shows, out of 383 students, 12.5% students have high levels of stress, 78.6% have moderate levels of stress and 8.9% students have low levels of stress.

It is seen from Pie chart 2 that the levels of stress in UG physiotherapy students is as follows: 13.3% students with high levels of stress, 77.7% with moderate levels and 9% students with low levels.

Pie chart 3 shows levels of stress in PG physiotherapy students. 8.3% students show high levels of stress, 83.3% show moderate levels and 8.3% show low levels of stress.

The mean scores for the extent to which stressors were felt by UG students is as follows: for academic stressors it is 6.424, for intrapersonal stressors it is 5.003, interpersonal stressors is 4.960, financial stressors is 4.359 and environmental stressors is 4.356. (Table no.1)

The mean scores for the extent to which stressors were felt by PG students is as follows: for academic stressors it is 6.517, financial stressors is 5.500, interpersonal stressors is 4.817, intrapersonal stressors is 4.767, and environmental stressors is 4.017. (Table no.1)

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In the population that participated, a maximum number of both UG and PG students reported moderate levels of stress. Academic stress has been reported highest among both UG and PG physiotherapy students. Reasons for high academic stress include high expectations from teachers and parents, inability to achieve the academic milestones set for oneself, competitiveness. Worrying for grades, pressure due to nature and quality of practice, communication with patients also contribute to academic stress in these students. (Ayed & Amoudi, 2020) (Gazzaz et al., 2018) Also, increased level of academic stress among university students may be because of lack of soft skills which might be addressed by academic support courses in early study years. (van Vuuren et al., 2018)

Financial stress in PG students was higher as compared to UG students. Studies show financial pressure in the PG students was reported whilst having to source accommodation. This often resulted in paying multiple rent, sourcing part-time work which was reported to be difficult for students due to time pressures, course intensity and travel requirements. (Brooke et al., 2020)

There was not much difference in the extent to which intrapersonal stressors ( $p=0.774$ ) and interpersonal stressors ( $p=0.534$ ) were felt by UG and PG students. Factors associated with intrapersonal stressors include mood, loneliness, psychological health and that with interpersonal stressors include interaction with qualified personnel, relationship with family members, relationship with partners, family issues, physical health etc. (Gazzaz et al., 2018) Inability to maintain a work life balance, lack of social life, inability to engage in hobbies due to workload of the program are some more intrapersonal causes that further contribute to causing stress in the students. (Brooke et al., 2020) (Gazzaz et al., 2018)

Environmental stressors contributed the least to stress in both UG and PG students as compared to the other stressors and did not show much difference between the two groups ( $p=0.534$ ). Environmental stressors are associated with conditions in hospital environments, finding accommodation, difficulty in journey back home, living conditions in hostel, adjustments with roommates etc. (Ayed & Amoudi, 2020) (Gazzaz et al., 2018)

## CONCLUSION

From the study, it can thus be concluded that UG and PG physiotherapy students experience moderate amounts of stress, with academic stress being the biggest contributor in both the groups.

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### **Conflict of Interest**

The author declared no conflict of interest.

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