

# Assessment of Perceived Stress and Coping Behaviour Strategies among Undergraduate Physiotherapy Students: An Online Cross-Sectional Survey

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DOI: <https://doi.org/10.52403/ijhsr.20240602>

## ABSTRACT

**Context:** Negative influence of stress on academic performance and psychological wellbeing has been studied among healthcare students but no major study has explored these aspects among undergraduate physiotherapy students in Gujarat.

**Aims:** Assessment of perceived stress and coping behaviour strategies among physiotherapy students of Surat.

**Settings and Design:** Online survey among various physiotherapy college students of Surat, Gujarat.

**Methods and Material:** Using Google form platform, a total of 144 participants, between the age group 18-21 years, from different colleges of Surat were included. The form included demographic details, the Perceived Stress Scale-10 and the Coping Behaviour Inventory.

**Statistical analysis:** Descriptive statistics were used to express the level of perceived stress and for the demographic data. The Pearson correlation coefficient was used to correlate between perceived stress and selection of use of cognitive behavioural coping strategies.

**Results:** 66.66% respondent reported moderate level of stress, 25% reported low level stress and 8.33% reported high perceived stress. Majority of the students reported problem solving as their preferred mode of coping followed by optimistic attitude. A significant positive correlation between perceived stress and selection of use of cognitive behavioural coping strategies as found. ( $p < 0.05$ ).

**Conclusions:** Most of the students feel that they are moderately stressed due to academic and clinical learning objectives. The most common coping behaviour adapted by physiotherapy students was problem solving during their graduation period.

**Keywords:** Behaviour, coping, mental health, physiotherapy, stress, students.

## INTRODUCTION

Stress is usually explained as a physiological reaction of an organism while confronting any situation which is perceived as threatening or of increased demand and where diverse defence mechanism comes into play to manage such situation.<sup>1,2</sup> Stress occurs when an individual confronts a

situation i.e., perceived as overwhelming and which they cannot cope up with.<sup>3</sup>

Previous studies have explained that students enrolled in the university level healthcare courses, experience higher stress levels which are associated with being worried about success, lesser availability of time and higher demands due to engagement

in lectures, practical demonstration classes and patient care.<sup>3-5</sup> Also, certain situational stressors such as deprivation of sleep, excessive workload, inability to deal with exposure to newly assigned administrative responsibilities, inordinate hours, and dealing with a large number of patients; have been suggested to play significant role.<sup>4</sup> Personal stressors including family, friend, and relationship issues; professional stressors such as attending lectures, practical training, responsibility for patient care, and difficult patient and career planning also have been shown to affect mental health of healthcare students significantly.<sup>5</sup>

Individual's response towards acute or chronic stresses is also known as allostasis. The "fight or flight" reaction is the usual acute stress response (short term response) when an individual feels threatened. When in stressful situation, the body starts to release several stress hormones (e.g., cortisol and adrenalin) into the bloodstream. These hormones will intensify individual's concentration, strength and ability to react. Once the stressor is removed, or after you have dealt with the short-term stress, the body returns to normal situation.<sup>6</sup> Memory of an individual is affected due to stress and is dependent on the duration of exposure to the stressful stimulus.<sup>7</sup> Modulation process in the central nervous system and neuroendocrine system secondary to stress also impacts immune system. Medical students suffer anxiety disorder because stress has a strong relationship to emotional and behavioural problem.<sup>8</sup>

Coping is explained as an individual's efforts in terms of cognitive and behavioural aspects to manage the internal and external demands of the person's environment and its transaction that is appraised as exceeding the person's resources.<sup>9</sup> An early study of stress among the interns of physiotherapy programs found that these students rated their perceived stress higher than did college students in other fields. Reason for the relatively high level of stress among interns may be related to the increase demand on them due to the changes in health needs and

services, increased need for enhanced amount of new knowledge acquired, and the increased range of responsibilities which is borne by the physiotherapist.<sup>10</sup> Increasing incidence of stress in young age students, especially among healthcare students, and its effects on physical and intellectual health of students such as depression, inability to take decision, etc. has raised concerns.<sup>6</sup> However, information related to stress and coping mechanism among undergraduate students of physiotherapy is insufficient. Therefore, our study aims to examine the stress perceived by undergraduate physiotherapy students and coping behaviour strategies adapted during their clinical training.

## **MATERIALS & METHODS**

An online cross-sectional survey was carried out on physiotherapy students from different colleges of Surat having age 18-21 years through invitation using social media platforms. The survey was carried out in the month of January 2023. 169 undergraduate students of physiotherapy responded to the pre-validated google form which included electronic consent for participation. Their responses to survey form were recorded using google spread sheet and were coded for anonymity. The students with history of any chronic medical or psychological issues were screened and excluded. 144 forms were finally selected for analysis after sorting and scrutiny.

The survey form included basic demographic details and outcome measures relevant to the primary and secondary outcomes of interest. For evaluation of stress levels, Perceived Stress Scale (PSS) was used whereas, for coping strategies, Coping Behaviour Inventory (CBI) was used.<sup>11,12</sup>

## **STATISTICAL ANALYSIS**

The collected data was analysed by using SPSS 20.0 software for Windows. Normality of the data was measured by using the Kolmogorov-Smirnov test and data was found to be normally distributed.

The descriptive statistics were expressed as mean  $\pm$  standard deviation, whereas the level and types of stress were expressed as percentages. Pearson's correlation coefficient test was used to assess correlation between the perceived stress and coping behaviour strategies.

## RESULT

The mean age of students is  $19.05 \pm 0.67$  years, with a range of 18-21 years. Table-1 shows that majority of the participants were females (n=103, 71.53%) and were from age group of 19-20 years (n=88, 61.11%). As shown in table- 2, scores of PSS suggest that 66.66% (n=96) respondents had moderate level stress ( $12.97 \pm 8.68$ ), 25% (n=36) respondents had low stress ( $2.17 \pm 4.23$ ) and 8.33% (n=12) respondents had reported high perceived stress ( $1.48 \pm 5.89$ ).

**Table 1. Demographic Characteristics (n=144)**

Characteristic	Categories	Frequency (n)	Frequency (%)
Age (years)	18	32	22.22
	19-20	88	61.11
	21	24	16.67
Gender	Female	103	71.53
	Male	41	28.47

**Table 2. Scores of Perceived Stress Scale (n=144)**

Perceived stress level	Range	No. of Participants (n)	Percentage (%)	Mean	SD
Low	0-13	36	25	2.17	4.23
Moderate	14-26	96	66.66	12.97	8.68
High	27-40	12	8.33	1.48	5.89

In response to the questions related to stress and their reactions to the stressful situations, the participants responded differently. Table-3 depicts frequencies of their responses about perception of stress, and their feelings related to those conditions as well as their ability to cope with certain situations. Over 20% participants often felt stress and approximately 50% often felt confident in dealing with perceived stress, whereas 13.9% reported that they often could not cope.

**Table 3. Participants' Responses to the Perceived Stressful Situation (n=144)**

Sr. No.	Response to Perceived Stress	Frequency n (%)				
		Never	Almost never	Sometime	Fairly often	Very often
1	Upset on unexpected	24 (16.7)	30 (20.8)	60 (41.7)	14 (9.72)	16 (11.1)
2	Unable to control	36 (25)	30 (20.8)	45 (31.7)	20 (13.9)	13 (9.02)
3	Felt stressed	22 (15.3)	12 (15.1)	64 (44.4)	24 (14.3)	22 (7.7)
4	Confident in dealing with stress	17 (11.5)	18 (12.8)	35 (24.2)	40 (27.8)	34 (22.6)
5	Going your way	14 (9.7)	22 (15.3)	54 (37.5)	36 (25)	18 (12.5)
6	Could not cope	30 (20.8)	42 (29.2)	52 (36.1)	14 (9.7)	6 (4.2)
7	Able to control	6 (4.2)	30 (20.8)	48 (33.3)	36 (25)	24 (16.7)
8	On top of things	100 (6.9)	32 (22.2)	68 (47.2)	18 (12.5)	16 (11.1)
9	Angered	18 (12.5)	38 (26.4)	64 (44.4)	12 (8.3)	12 (8.3)
10	Difficulties pilling	30 (20.8)	54 (37.5)	42 (29.2)	12 (8.3)	6 (4.2)

The mean of total score of CBI reported by the participants was  $34.7 \pm 9.19$ . Problem solving was reported as the most preferred method of coping, followed by staying optimistic, transference of the stress and avoidance of situation (Table-4).

**Table 4. Scores of Coping Behaviour Inventory**

Stress Factor	Mean	SD	Factor ranking
CBI Total	34.7	9.19	—
Avoidance	6.72	3.34	4
Problem solving	13.8	5.26	1
Stay-optimistic	8.94	3.85	2
Transference	7.93	2.63	3

Correlation of low stress levels was found to be significantly strong and negative with avoidance behaviour; whereas problem solving and optimism were found to have positive correlation at the 0.05 level (2-tailed). Moderate stress levels demonstrated positive correlation with avoidance and negative correlation with problem solving as well as with optimism. High level stress demonstrated positive correlation with avoidance. (Table-5)

**Table 5. Correlation between Stress and Coping Behaviour**

Stress level	CBI Factors				
	Significance	Avoidance	Problem Solving	Stay Optimistic	Transference
Low level stress	p <0.05 (2-tailed)	-0.035**	0.041**	0.027*	0.210
Moderate stress		0.035**	-0.039**	-0.024*	-0.058
High stress		0.031**	0.380	-0.067	-0.187
*Suggests moderate correlation		**suggests strong correlation			

## DISCUSSION

This study was aimed at assessing levels of perceived stress and preferred coping behaviour strategies among physiotherapy students in Surat region of South Gujarat. The study was conducted across various physiotherapy colleges using survey method and 144 undergraduate students participated. Statistically significant positive correlation between the PSS scores and the CBI scores was demonstrated ( $p < 0.05$ ).

The findings of this study shows that two thirds of the student participants reported moderate level stress, whereas only 8.33% reported high levels of perceived stress. Also, over 20% students said that they often felt stressed, and 41.7% often felt confident about their ability to handle their personal problems, 13.9% participants often found that they could not cope with things that they had to do and 36.1% reported that sometimes they could not cope with circumstances they have to face. Findings of this study suggest that most common strategies used by students are problem solving followed by an attitude of staying positive. Participants reported avoidance as the least used mechanism to cope with stress. Students who reported lower stress levels, also reported that they use logic-based problem solving and try to stay optimistic as much as possible to cope with these situations. Students who reported moderate to high level stress, commonly used avoidance of the situation as a coping strategy.

According to a previous study, moderate level stress was reported among college going medical students of Turkey. They reported that dealing with teachers, nursing staff, peer and daily life task while studying; assignments and workload; along with finally stress from taking care of the patients

created moderate levels of stress. They also suggested that low-level stress was due to lack of professional knowledge and skill and stress from the environment. The common strategies reported for coping in the previous study was problem solving whereas lowest used mechanism was avoidance.<sup>3</sup>

A study conducted to evaluate the stress faced by nursing students in their initial period of clinical practice, by Sheu et.al (2002) showed that the stress usually came from lack of professional knowledge and skills as well as the actual experience of caregiving; and external stressors such as assignments, workload, teachers, nursing staff, clinical environment, peers, or daily life. They reported that the students experienced stress because of being unable to help patients with psycho-social problems during the initial period of clinical practice.<sup>12</sup>

In a study by Ayed et.al. (2020), they found that physical therapy students were unfamiliar with the skills of dealing with both academic as well as clinical environments simultaneously. They mentioned that factors such as multiple assignments including clinical and academic pursuits create additional stress on students. They recommended that in view of their findings, revision of the teaching methods and assessment of the workload should be done. The educators shall take in consideration the demonstration and simulated training for students before assigning the students to direct care with real patients. This can give them a chance to interact with patients without harm in a controlled, safe environment.<sup>13</sup>

As for any research, there were certain limitations of the study including smaller sample size; limited geographical coverage

and lack of long term follow up after providing suitable intervention.

Regular, moderate intensity exercises along with relaxation, good sleep habits, and seeking emotional support from family and friends can improve thought process and mood. The long-term effect of chronic stress can also be reduced by eating a healthy, low-fat diet and avoiding smoking and drinking too much alcohol.<sup>14</sup>

## CONCLUSION

The level of stress among physiotherapy undergraduate students have been reported to be significant in this study. This study also confirms that there is a significant positive correlation between perceived stress and selection of use of cognitive behavioural coping strategies. The most common strategy adapted by students is problem solving, skills for which can be enhanced using systematic changes in education provision and lifestyle during study years.

### Declaration by Authors

**Acknowledgement:** None

**Source of Funding:** None

**Conflict of Interest:** The authors declare no conflict of interest.

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How to cite this article: Aparna A. Bachkaniwala. Assessment of perceived stress and coping behaviour strategies among undergraduate physiotherapy students: an online cross-sectional survey. *Int J Health Sci Res.* 2024; 14(6):7-11. DOI: <https://doi.org/10.52403/ijhsr.20240602>

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