

**ORIGINAL ARTICLE****PREVALENCE OF STRESS AMONG PHYSICAL THERAPY STUDENTS: A COMPARATIVE STUDY BETWEEN PUBLIC AND PRIVATE UNIVERSITIES****ABSTRACT****BACKGROUND AND AIMS**

Stress may lead to hypertension, tachycardia and hormonal variations; it has both positive and negative effects on human body to cope up with the destructive responses of distress that alters the internal and external environment of the body

**OBJECTIVES**

To assess the prevalence of stress among the undergraduate DPT students of private and public sector universities of Karachi Pakistan.

**METHODOLOGY**

A cross-sectional survey was conducted among the undergraduate Doctor of Physical Therapy students of public and private sector universities. Random sampling technique was used for enrolment of participants. The data was collected from 318 students through Student Stress Inventory (SSI) tool and analyzed on SPSS version 20.

**RESULTS**

The prevalence of stress among the participants was 11.5% from Karachi University, 55.0 % from Ziauddin University and 33.3% from JPMC. Total participants included were 261 females and 51 males. Around 53.8% were suffering from moderate stress, 25.8% with mild stress. Moreover public and private sector stress level lie at moderate category

**CONCLUSION**

The study revealed that moderate level of stress was found among the majority of undergraduate DPT students. The stress level in private sector is calculated as 55.0 % where as 44.9% is found in public sector.

**KEYWORDS**

*Stress, Anxiety, Physical Therapy, Healthcare Professionals, Profession, Healthcare delivery*

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## INTRODUCTION

Stress is the non-specific reaction of the body to any command in order to adjust or answer that is, the degree at which we live at any one instant<sup>1</sup>. A report by World Health Organization shows that Nigeria has the highest level of stress about 70.1% whereas Pakistan is ranked as the 7th largest country affected by stress with the prevalence of 57.6%, India with 48.9%, United States having 25.8%, and Norway which is ranked as the least affected country by stress with 5.4%<sup>1</sup>.

Moreover, in a cross-sectional study conducted at Riphah Center of Rehabilitation Sciences, 231 students from first semester to fourth semester were included in the study and are believed to be at high risk of developing stress which was measured through Student Life Stress Inventory (SLSI) tool. 88% of the respondents reported feeling stressed out of which 42% students were mildly stressed, 40% were moderately stressed, and 6% were severely stressed<sup>2</sup>.

The predominance of stress examined among medical students at Jimma University, Ethiopia was found to be 58.3%, followed by the 2nd year students (57.0%), 3rd year students (48.9%), 4th year students (56.6%) and eventually 5th year students (50.0%). There is a marked correlation between the stress level and the level of academics. ODDS ratio were 16.67 of 1st year students, 13.49 of 2nd year students, 9.12 of 3rd year students, 14.8 of 4th year students and 7.25 of 5th year students. Hence, the first 3 years of study was recorded as the dominant stressing years as compared to the last 2 years<sup>3</sup>. Many studies show low quality of sleep in medical students and the increasing factor for insomnia is psychological stress among medical students which reduces their sleep quality<sup>3</sup>. To increase sleep, self-prescription and exploitation of drugs was reported by 4.9 % of the students in four universities of Pakistan<sup>4</sup>. Students suffering from insomnia have lower self-esteem and are more involved in road traffic accidents<sup>5</sup>.

Stress has both positive and negative effects on human body to cope up with the destructive responses of distress that alters the internal and external environment of the body. Positive influence of stress prepares the body for action and negative influence causes psychological conditions like depression, anxiety, distress and anger. Stress may also lead to hypertension, tachycardia and hormonal variations in order to respond to stress. Certain illnesses such as angina, asthma, cancer, cystitis, depression, diabetes mellitus, diarrhoea, heart attack, migraine, psoriasis, rheumatoid arthritis, and alopecia universalis can also result from stress<sup>6</sup>.

University students experience massive stress during

their initial years of study<sup>7</sup>. Students exhibit a great risk of developing psychological stress, mental disorders and low self-esteem. Additionally, it leads to substance abuse and drug compulsion<sup>8</sup>. Furthermore, students encounter other stressing factors such as environmental, physical, social and family problems that impact their performance negatively<sup>9</sup>. According to literature, stress results in an increased rate of withdrawal of students from their academic programs<sup>10</sup>. To overcome the stress, coping strategies are categorized into 3 broad categories areas: problems focused, emotion focused and avoidance focused<sup>11</sup>. As we know that stress can lead to many disturbances of mechanism in our body such as weight gain that leads to high body mass index and increase abdominal adiposity<sup>12</sup>. Certain studies indicate that as physical risk factors are the cause of MSDS (musculoskeletal disorders) same as psychological risk factors impacts on musculoskeletal disorders such as anxiety, high distress level and depression<sup>13</sup>. The strategies to overcome stress are to make students aware of their individual stressors and coping mechanisms. Such students are taught resilience-based strategies such as cognitive restructuring, mindfulness and breathing exercises<sup>14</sup>.

Various coping strategies were used by the students to overcome stress and the most commonly used technique was acceptance. The other common method to cope with the stress was instrumental support and positive thinking about situations<sup>15</sup>. Literature shows that coping mechanism plays a key role in stressful life events. An increase in sexual behaviour and eating disorders were found among depressed medical students. Survey of NEDA (National Eating Disorder Association) in 2006 documented that 20% of students had eating disorders and it is reported that about 696,000 students were sexually abused by the other students who are believed to be under stress<sup>16</sup>.

In the present era, stress has become a factor that is impairing and affecting lives in a destructive way. An individual must be able to identify the stressor to formulate a strategy in order to overcome the source affecting his/her life. In a comparison study, regarding mental distress between the students of medicine and students of general groups sharing same age group, it was found that medical students have a higher degree of stress<sup>17</sup>. There are numerous studies showing that youngsters or teenagers are more prone to get depressed<sup>18</sup>. Anxiety and stress are related to cause massive increase in risk of weight gain<sup>19</sup>. Students studying in university are especially considered to be highly stressed as they undergo major aging changes from teenage to maturity and many retrospective as well as prospective studies have reported that majority of adulthood psychological distress have started from childhood and adolescence<sup>20</sup>. A Korean study compared students of medicine and engineering

and it was revealed that prior group had an elevated depression rank (52.3%) than the latter group (34.0%)<sup>21</sup>.

In the present time, stress has become a night mare which is severely impairing the life of Individuals. It reduces the ability to perform well and is also a source of many deleterious effects on health.

## METHODOLOGY

### Study Design

This is a cross-sectional study.

### Study Setting

The study was conducted in the Physical therapy departments of 2 public sector and 1 private sector universities.

### Target Population

Both male and female students enrolled in the program of Doctor of Physical Therapy.

### Sample Size

The sample size was 318 participants from all mentioned universities.

### Sampling Technique

Data was collected through convenience sampling technique.

### Duration of Study

The study will be completed in the duration of 6 months.

### Inclusion Criteria

Students of DPT program from different universities.

### Exclusion Criteria

- Students diagnosed with anxiety, stress and depression.
- Using medications (Antidepressants).

### Data Collection Tool

Data was collected using the STUDENT STRESS INVENTORY (SSI) tool. A research conducted using SSI tool indicates the overall validity of 0.805(80.5%). Overall reliability of SSI was found to be 0.857 (85%).The reliability of the sub scale of physical and interpersonal relationship was at moderate level which had a value of 0.680 and 0.620 respectively<sup>22</sup>.

### Data Collection Procedure

A cross sectional study which was conducted among the DPT students of Ziauddin College of Rehabilitation Sciences, Jinnah University and University of Karachi. For the purpose of collecting data from the students of University of Karachi and Jinnah University, a request letter to the Department of Physical Therapy of both the universities was sent and permission was attained. After the approval, suitable time was opted for the data collection

procedure. The STUDENT STRESS INVENTORY (SSI) tool was used and the questionnaire was administered to all the enrolled students. The procedure was explained to the subjects and informed consent was obtained. Participants were also assured about the confidentiality of their provided data. The questionnaire comprised of 40 questions that were based on stress level among the students. After collecting the questionnaire from the students the data was analysed through SPSS tool version 20.

### Data Analysis Procedure:

The data was analysed through SPSS version 20.

### Ethical Consideration

Research participants were not subjected to harm in any ways. Respect for the dignity and concealment of research participants was prioritized. Students were also assured about the confidentiality of their provided data.

### Public Health Significance

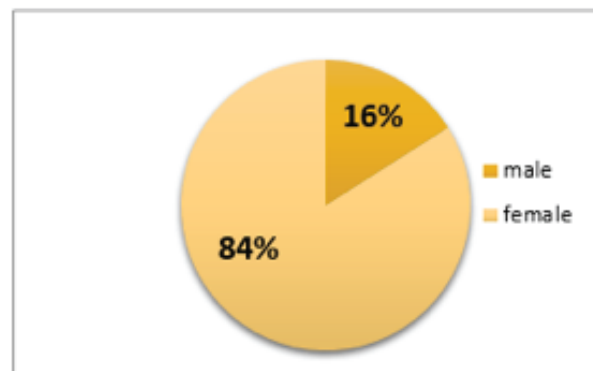
This study will prove helpful to find out the level of stress among public and private sector colleges offering DPT. It also supports to identify various factors that prove to be the precursor for production of stress among students.

### Budget

Total budget for the research is estimated to be around Rs.6000/- for the purpose of transport and proforma documentation etc.

## RESULT

A total number of 318 participants from public and private universities participated in the study with the mean age 21±2 out of which 261 were females and 51 were males. The ratio of students is shown in Figure 1.



**Figure 1** Depicts the percentage of male and female participants of the study

From a total of 318, all participants completely filled and returned the questionnaires with following distribution: Karachi University 37 (11.5%) followed by Ziauddin University 175 (55%) and JPMC 106 (33.3%). The distribution is depicted in Figure 2

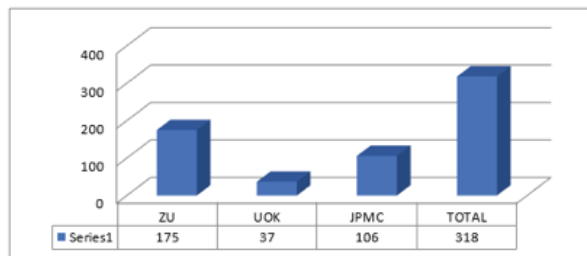


Figure 2 Depicts frequencies of participants in public and private institutions.

Students participated in this research were from different academic years (1st, 2nd, 3rd, 4th and 5th year). Overall data of this research work has been analysed through the SPSS software. The questionnaire was sub divided in 4 domains such as Physical, Interpersonal, Academic and Environmental. The survey result reported that about 23.05% students were suffering from stress physically, 22.89% students were dealing with stress due to Interpersonal things or relationships. About 25.75% students have stress due to their Academics and 26.7% students have Environmental stress as shown in Figure 3

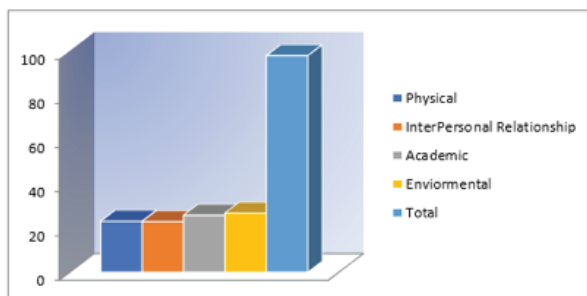


Figure 3 illustrating the percentage of stress as per the four domains of SSI

As it is mentioned in the study that, it is a comparative study between public and private institutions so out of 318 students, 141 were from public sector whereas 174 from private sector. The data was analysed on the basis of mild, moderate and severe stress. Mild stress score ranges from 40-80, Moderate from 81- 121, Severe from 122-160. Majority of the research participants were suffering from moderate form of stress with the percentage of 53.8% meanwhile 25.8% of students had mild stress and only 20% of medical students were severally affected by stress as shown in table 1 and figure 4.

n	Level of stress	No of participants	%
318	Mild	80	25.8
	Moderate	171	53.8
	Severe	65	20.4

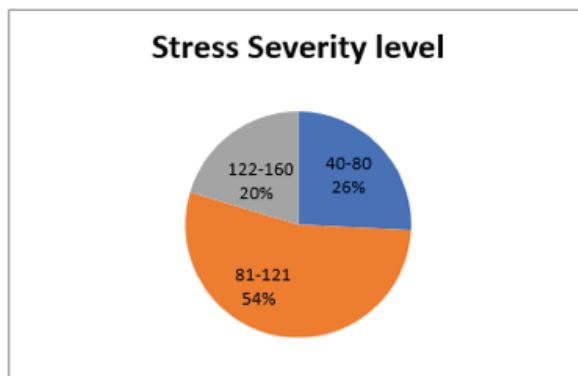


Figure 4 illustrating percentage of stress level among participants

The results revealed that both public and private institutions have moderate stress as public institution reported the mean value of 85.91% whereas the private institution shows 108.54% mean value that showed that both sectors have moderate stress level as depicted in figure 5.

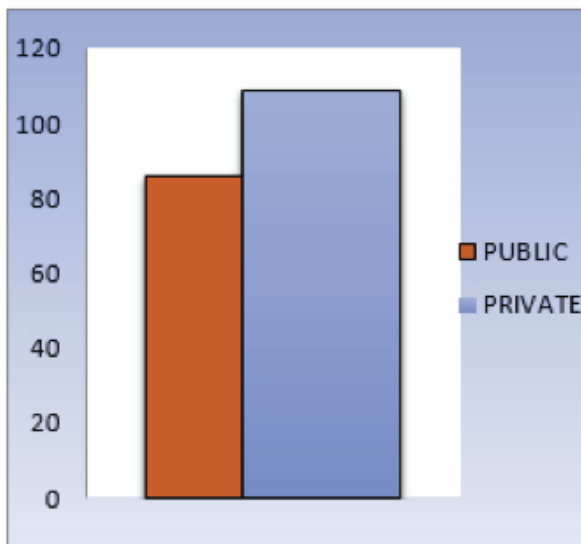


Figure 5 illustrating mean difference of stress among private and public sector universities

DISCUSSION

The study is conducted in different colleges of Karachi, Pakistan. Our study is based on the prevalence of stress among Doctor of Physical Therapy students. The current study has evaluated the stress under four domains of SSI among DPT students. The data is then evaluated through SPSS tool. Both male and female students with the ratio of 82% female and 16% male of different universities namely Ziauddin University, Jinnah Post Graduate Medical Centre (JPMC) and University of Karachi. It was found that 25.8% suffering from mild stress, 53.8% are in moderate and only 20.4% in severe stress. Whereas, a similar study reveals that 17% suffer from mild stress, 25% from moderate stress and 11% from severe stress<sup>22</sup>.

The results of this study have shown that most of the students 26.7% are suffering from environmental stress and in another study, it was found that majority of participants 49.23% suffered from academic stress<sup>23</sup>.

Jia et al. conducted a study in Malaysian university in 2018 that revealed a high prevalence rate of perceived stress among undergraduate students. For the purpose of data collection, Perceived Stress Scale (PSS) and the Student Stress Survey (SSS) were employed. Particularly, the stress level was elevated in female and the first year undergraduate students<sup>24</sup>.

Globally, poor mental and psychological health has been reported among medical students. A study was conducted by Fawzy et al. in 2017 in a public university of Egypt determining psychological stress, depression and anxiety. A cross-sectional study was conducted among 700 participants and for the purpose of assessment, several questionnaires were administered including Depression Anxiety Stress Scale (DASS 21) and Pittsburgh Sleep Quality Index (PSQI). Statistical analysis revealed that high scores of Depression Anxiety Stress Scale and PSQI were achieved by females in the preclinical years or freshers residing in university hostels. Moreover, students having lower academic achievement also had high level of stress. Thus, it was concluded that anxiety, depression and stress were common amongst the medical students and specifically in female gender<sup>[25]</sup>.

Literature was collected from different nationalities globally having diverse education systems which revealed that medical students have greater psychological morbidities as compared to non-medical students and the general population. Moreover, cognitive and mental issues were found among medical students admitted in public universities as well as those enrolled in private medical schools. Academic stressors include; complications with comprehension and memorizing new syllabus, trouble with reading textbooks particularly if there is lack of a premedical university preparatory program, excessive workload, substantial medical curricula, prolonged teaching hours, insufficient leisure or recreation times; substandard educational process at the college; irregular schedules, frequency of tests, competitiveness with peers and agony related to educational performance or accomplishment and panic of failure. Psychosocial stressors include: the high paternal expectations; home sickness; the new living accommodation; financial strain; fear of future failure in medical career. Socio-demographic stressors include: gender difference i.e. males versus females; smoking; substance abuse, marital status; job along with the study; the levels of parents' education; cultural background and the socioeconomic status of the family. Such stressors may result in decreased sleep

quality, mediocre academic performance, alcohol and substance abuse, compromised quality of life and 3 psychiatric disorders or even suicidal attempts. In Arab countries, epidemiological data about psychological morbidities among medical undergraduate students are few. Merely two studies were carried out in Egypt that estimated the psychological and emotional condition of undergraduate students enrolled in medical studies and gauged its associated stressors <sup>[25]</sup>.

The domains of stress included are physical, interpersonal, academic and environmental stress. According to data analysis, the level of stress found in these domains is: 23.05% physical stress 22.89% interpersonal stress, 25.75% academic stress and 26.7% environmental stress which show the highest level of environmental stress among DPT students. The level of stress found in public sector institution is 44.9% and 55% in private sector institutes.

The results of our research has interpreted that there is no remarkable difference in stress level among public and private sector DPT students. Our findings state that both public and private sector stress level lie in moderate category because public sector recorded the mean value of 85.91.

On the contrary, private sector shows mean value of 108.54 that distinctly shows that both public and private sectors have moderate stress level among their students.

This study revealed that moderate level of stress was found among the majority of undergraduate DPT students and the highest percentage of stress was found among the domain of environmental stress as 26.73 % and the stress level in private sector is calculated as 55.0 %. Whereas 44.9% is found in public sector. Hence, there is not a remarkable difference in the stress level of public and private university students, as both of them showed the moderate level of stress.

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