

# Exploring the Relationship between Burnout and Academic Performance Among pre-clinical and Clinical Year Physical Therapy Students

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## Author's Contribution

<sup>1</sup> Substantial contributions to the conception or design of the work for the acquisition, analysis or interpretation of data for the work, <sup>3,5,4</sup> Drafting the work or reviewing it critically for important intellectual content, <sup>1,2</sup> Final approval of the version to be published.

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## Introduction

Burnout is a multifaceted occupational syndrome, categorized into three different symptoms that include increased depersonalization, emotional exhaustion and professional doubt. Evidence reveals that having as low as one symptom of burnout can result in detrimental effects and not only disturbs the learning process but also leads to emotional disturbance, headache, eating disorders, fatigue, and even substance abuse.<sup>1</sup> Clinical burnout has been explained as a pattern occurring in healthcare staff that results in reduced personal accomplishment, depersonalization, and emotional exhaustion. It has been recognized to have a deleterious

## ABSTRACT

**Background:** Burnout is a psychological paradigm characterized by emotional exhaustion which is emanated from a plethora of physical, emotional, and social stresses over a prolonged period of time. Burnout has become an imperative public health alarm owing to its relationship with deleterious consequences across various occupations and students.

**Objective:** To investigate burnout in pre-clinical and clinical year physical therapy students.

**Methodology:** An analytical cross-sectional study was conducted on 384 physical therapy students belonging to the age ranging from 18-24 years of age. The study was carried out in Foundation University College of Physical Therapy, Yusra Medical and Dental College and IBADAT International University. Burnout was assessed by using Oldenburg Burnout Inventory Student version (OLBI-S). Analysis was done using SPSS version 23.

**Results:** The results exhibited that there was a negative and weak relationship between disengagement and CGPA as  $r=-0.00$ ,  $p=0.95$  in pre-clinical and  $r=-0.14$ ,  $p=0.04$  in clinical year students which depicted that with the increase in disengagement there was a decline in the students' performance. Also, there was a negative but weak relationship between exhaustion and CGPA as  $r=-0.13$ ,  $p=0.06$  in pre-clinical and  $r=-0.09$ ,  $p=0.18$  in clinical year students which described that if the exhaustion increases then the students' performance is dropped.

**Conclusion:** This study concluded that both the pre-clinical and clinical physical therapy students illustrated moderate levels of burnout subscales i.e. emotional exhaustion and disengagement. Moreover, the outcomes suggested that increase in the level of burnout in students resulted in deterioration of the student's academic and clinical performance.

**Keywords:** Academic Performance, Emotional Exhaustion, Medical students, Oldenburg Burnout Inventory, Professional Burnout, Physical Therapy.

influence on the welfare of staff, the proficiency of interactions between staff and clients and unfavorable outcomes for the organizations where staff works.<sup>2</sup> On the other hand, academic burnout can be explained as a feeling of tiredness arising from an obligation to study (exhaustion), hopelessness related to assignments (cynicism), and a notion of being unskilled as a learner (inefficacy). Academic burnout is important for three reasons, initially, it affects the academic achievement of students; then, it affects how learners interact with teachers and staff; and third, it may make students lose interest in studying.<sup>3</sup>

Although burnout is already persistent in multiple professions, there is a considerable occurrence of this condition among healthcare students.<sup>1</sup> Burnout among medical students

has a lot of allegations because of corporation with non-attendance and reduced state of mind. It is related to adverse effects at personal level involving medical errors, poor clinical decision-making process, hostility to patients, unhealthy relationships with other healthcare workers, depression and exhaustion, alcoholism, sleep disturbances, substance abuse, and suicidal thoughts.<sup>4</sup>

Exhaustion is associated to stress that an individual undergoes and decreases the physical and emotional reserves consequently. Maslach and Jackson stated that it is the significant feature of burnout syndrome. Emotional exhaustion in a profession or environment decreases the potential of an individual to engage effectively with colleagues. It lowers the capability of an individual (i.e. students, colleagues, or teachers) to collaborate with others and accomplish their professional needs. Burnout syndrome starts with exhaustion, it is the primary feature of burnout and then it causes depersonalization, and subsequently, as a result of fatigued individuals, businesses falter and ultimately collapse.<sup>5</sup>

Disengagement can be described as a feeling of detachment from work in general which includes distancing from work content and environment. Moreover, students' disengagement is considered as a crucial issue as it averts the students from achieving their scholarly goals. Disengagement is associated with various teaching factors including indifferent design and educational activities leading towards absenteeism.<sup>6</sup>

Academic performance is most frequently demarcated as examination performance. Academic efficiency is marked by the entire performance annually per semester which determines in a Grade Point Average (GPA). This GPA score would incorporate students' performance in quizzes, coursework, and examinations Teachers' self-efficacy has a significant impact on their pupils. Students are more self-assured and have a good attitude toward their studies when teachers create a welcoming environment, which results in outstanding academic performance.<sup>7</sup>

Evidence suggested that undergraduate medical training is emotionally draining and extensive with increased levels of mental health concerns in medical students at several points of their academic life and training period. They are constantly exposed to burnout symptoms because of psychosocial triggers throughout their training period and academic life.<sup>8</sup>

The findings from this study can benefit in the development of interventions to address burnout of the students including guided group discussions with supervising faculty staff for prevention, early identification, or treatment of burnout. This

can help prevent future errors and reduce inappropriate distress.

Staff/faculty development should possess the necessary teaching skills that are required to establish an optimal learning environment and offer constructive feedback. Encouraging students to engage in personal pursuits through social events can enhance peer-to-peer and peer-to-faculty interactions. Encouraging individuals to find meaning in their studies, participate regularly in recreational activities, and maintain a positive mindset can help them alleviate burnout and improve their clinical skills. These interventions aim to address the different aspects of burnout and ultimately reduce mental strain and enhance the overall well-being of individuals.

The objective of this research was to investigate burnout in pre-clinical and clinical year physical therapy students.

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## Methodology

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This cross-sectional analytical study was conducted in May 2023- June 2024 and the data was collected from Foundation University College of Physical Therapy, Foundation University, Islamabad, IBADAT International University Islamabad and YUSRA Medical and Dental College Islamabad. ethical approval letter was received from foundation university ethical review committee with the reference number of ff/fumc/215-339 phy/23.

Non-Probability purposive sampling was employed. The sample size calculated through Open Epi sample size calculator was 384. The population size including young adults (18-24 years) from Islamabad, was taken through Pakistan Bureau of Statistics (PBS) using the reference population of 3, 96,733, with the confidence level of 95% respectively. Moreover, 192 students from the preclinical and 192 students from the clinical years were recruited.

Students from preclinical years (1st and 2nd year) and clinical years (3rd, 4th and 5th year), age ranging from 18-24 years and both genders were recruited in the study. Moreover, post-graduate physical therapy students were excluded from the study.

Oldenburg Burnout Inventory Student version (OLBI-S) determines the feelings of exhaustion and disengagement and includes both negatively and positively worded questions for each component. A student version of the OLBI (OLBI-S) was developed by Reis et al. and is permitted to use without any cost. Each eight-item subscale (Disengagement and Exhaustion) has 4 positively and 4 negatively worded questions. The participants' responses to each question were

recorded on a 4-point Likert scale ranging from 1 (strongly agree) to 4 (strongly disagree).<sup>9</sup>

Both subscales of OLBI-S, exhaustion, and disengagement, consist of four negatively worded items that have to be reversed i.e., from 1 to 4, 2 to 3, 3 to 2, and 4 to 1 so that higher scores correspond to higher burnout. The cut-off values of disengagement subscale are low (<1.73), moderate (1.74-2.57) and high (>2.58). The cut-off values of exhaustion subscale are low (<1.98), moderate (1.99-2.89) and high (>2.90).<sup>10</sup>

The reliability values of OLBI-S exhaustion subscale is ICC = .916 and OLBI-S disengagement subscale is ICC = .955. The internal consistency of exhaustion subscale is Cronbach's  $\alpha$  = .833 and the disengagement subscale is Cronbach's  $\alpha$  = .784 (11).

The data was evaluated by using SPSS-21 software and illustrated in form of tables. Kolmogorov-Smirnov test was used to evaluate the normality of data. The score of normality test depicted that the data was non-normally distributed ( $p < 0.05$ ). After that, Spearman's correlation was used for correlation analysis between components of burnout and academic performance.

## Results

The mean age of all participants was  $21.40 \pm 1.46$  with the total number of 384 participants. The descriptive results for age of participants is depicted in Table I. Moreover, the gender distribution in all participants included females 344 (86%) and males 56 (14%).

Table I: Descriptive statistics of age.			
Group	Minimum	Maximum	Mean $\pm$ Std. Deviation
Pre-clinical	18.00	24.00	20.24 $\pm$ 1.023
Clinical	20.00	24.00	22.57 $\pm$ 0.704
Total	18.00	24.00	21.40 $\pm$ 1.462

The mean exhaustion and mean disengagement of the participants were evaluated for both groups as represented in Table II. Both components of burnout remained within the moderate range i.e., 1.99-2.89 for exhaustion and 1.74-2.57 for disengagement respectively.

Table II: Mean scores of components of burnout.	
Mean Exhaustion	Mean $\pm$ Std. Deviation
Pre-clinical	2.56 $\pm$ 0.493
Clinical	2.67 $\pm$ 0.492
Mean-Disengagement	Mean $\pm$ Std. Deviation
Pre-clinical	2.29 $\pm$ 0.492
Clinical	2.50 $\pm$ 0.482

In addition to this, Spearman's correlation was used for correlation analysis as the data was non-normally distributed. The results indicated that there was a negative but weak relationship between exhaustion and cumulative grade point averages as  $r = -0.13$  in pre-clinical and  $r = -0.09$  in clinical year students which displayed a decline in the students' performance with the increase in the exhaustion. (Table III)

Moreover, there was a negative but weak relationship between disengagement and cumulative grade point averages as  $r = -0.004$  in pre-clinical and  $r = -0.145$  in clinical year students which revealed if the disengagement was increased, then the students' performance was compromised subsequently. (Table III)

Table III: Correlation of Exhaustion and Disengagement with CGPA.			
Variables	Groups	r	p-value
CGPA and Exhaustion	Pre-clinical	-0.138	0.06
	Clinical	-0.093	0.18
CGPA and Disengagement	Pre-clinical	-0.004	0.95
	Clinical	-0.145	0.04

## Discussion

An analytical cross sectional study was carried out among undergraduate physical therapy students to explore the relationship between burnout and academic performance using the Oldenburg Burnout Inventory Student Version (OLBI-S) scale. The subscales of burnout i.e. exhaustion and disengagement were analyzed separately which displayed a negative but weak relationship showing that with the increase in exhaustion and disengagement, the academic performance of the students was subsided.

Rana H. conducted a study to find the effect of student's burnout on educational achievement. The results depicted that the exhaustion was weakly correlated with cumulative grade point averages as  $r = -0.186$ , depicting negative correlation with their CGPAs or academic performance. It illustrated that as academic burnout increases it roots for emergence of serious outcomes and the performance of student's declines. After getting emotionally exhausted, students exhibit negative attitudes towards their educational institutes, responsibilities and projects.<sup>5</sup> Almost identical results were acquired in the current study as there was a negative and weak relationship between exhaustion and cumulative grade point averages as  $r = -0.13$  in pre-clinical and  $r = -0.093$  in clinical year students which represented that if the exhaustion increases then the students' performance decreases.

Evidence suggested that burnout among Kazakhstani medical students using OLBI-S was 31%. The OLBI-S mean score for disengagement and exhaustion was  $2.43 \pm 0.631$  and  $2.79 \pm 0.628$  respectively. Thus, both the components illustrated moderate values for burnout. Moreover, the students who were less involved in extra-curricular activities, not satisfied with choosing medical profession with decreased academic performance and increased parental expectations revealed high level of burnout.<sup>12</sup> The current study revealed that both pre-clinical and clinical PT students showed moderate levels for both exhaustion ( $2.56 \pm 0.493$  in pre-clinical and  $2.67 \pm 0.492$  in

clinical students) and disengagement ( $2.29 \pm 0.492$  in pre-clinical and  $2.50 \pm 0.482$  in clinical students). Meanwhile, the students felt disconnected and were not able to manage the study related workload and talked about the studies in a negative way.

A survey was conducted using MBI (Maslach Burnout Inventory) scale to determine the burnout levels among 1st and 5th year medical students. The mean emotional exhaustion in 1st year was  $20.63 \pm 4.59$  and  $18.46 \pm 6.25$  in 5th year. Moreover, the study revealed high levels of burnout in health care students. Also, the high levels of burnout and average grade point do not significantly relate to one another.<sup>13</sup> The results of this evidence contradicted the findings of the present study. In the current study, Oldenburg Burnout Inventory Student version (OLBI-S) scale was utilized which demonstrated moderate burnout levels among pre-clinical (emotional exhaustion =  $2.56 \pm 0.49$ ) and clinical year medical students (emotional exhaustion =  $2.67 \pm 0.49$ ).

A literature explored the correlation between burnout syndrome and academic performance in high school students using the Maslach Burnout Inventory-Students Survey. The result predicted significant but negative association between burnout syndrome and academic performance ( $r = -0.712$ ,  $p < 0.01$ ). It was also interpreted that when students experienced emotional exhaustion, they formed a negative and detached behavior towards their educational tasks leading to raised levels of burnout and low academic performance.<sup>14</sup> In the current study, the students felt sickened and disconnected from the study, emotionally drained, needed more time to relax and feel better and were not negatively engaged with the studies.

In another evidence, the prevalence of burnout among medical students of Nepal was assessed which came out to be as high as 65.9%. The mean of the total score of disengagement subscale was  $2.28 \pm 0.34$  and the mean of the total score of exhaustion subscale was  $2.50 \pm 0.42$ . This study displayed a disturbing occurrence of burnout in nearly 1/3rd of the students. These outcomes designated the requisite of employing efficacious strategies by pertinent authorities for the mental well-being of students and forthcoming doctors.<sup>9</sup>

It is necessary to encourage students to integrate different self-care practices into their daily life on an individual basis. These practices include maintaining a healthy diet, getting daily physical activity, getting enough sleep, finding a balance between study and play, practicing self-compassion, and being conscious of their emotional requirements. In the same way, hobbies and healthy coping strategies aid in reducing the stress associated with medical school. Common exercises include

yoga, mindfulness, reading, writing, and playing group-based outdoor games.<sup>15</sup>

A few limitations of the study are acknowledged. Firstly, there was a greater percentage of female population as compared to males. Secondly, the student's personal engagement, tiredness, and refusal to consent limited the study. Lastly, although the calculated sample size was achieved, but not all students were comfortable in sharing their CGPA. Moreover, further research is necessary to determine the impact of variables like gender, age, extracurricular activities, hosteller status, relationship status, lack of sleep, etc. on burnout.

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## Conclusion

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The present study concluded that there was a weak and negative correlation between burnout and academic performance. Thus, the findings suggested that with the upsurge in the level of burnout in students, a decline in the student's academic learning and clinical performance was observed. Moreover, both pre-clinical and clinical physical therapy students illustrated moderate stages of burnout subscales i.e. emotional exhaustion and disengagement.

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