

Prevalence of Burnout Syndrome and Coping Mechanisms among Physiotherapy Students: A Cross-Sectional Study

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Abstract

Background: Physiotherapy students are exposed to academic, practical, and clinical demands that may contribute to stress and burnout. The coping mechanisms adopted by students may influence their ability to manage these demands and maintain psychological well-being. Burnout and coping may vary across different stages of physiotherapy education.

Objective: To assess the prevalence of burnout syndrome and coping mechanisms among physiotherapy students and to compare burnout levels across different academic years, including first-year, second-year, third-year, fourth-year students, and interns.

Methodology: A cross-sectional observational study was conducted among 250 physiotherapy students aged 18–25 years from physiotherapy colleges in Pune, Maharashtra, using convenience sampling. Burnout was assessed using the Maslach Burnout Inventory–Student Survey (MBI-SS), and coping mechanisms were assessed using the Brief COPE Scale. Data were analysed using appropriate statistical methods to compare burnout-related scores and classifications across academic years and to assess coping mechanisms.

Results: Among the 250 participants, 195 (78.0%) were female and 55 (22.0%) were male. Significant differences across academic years were observed in Emotional Exhaustion ($p < 0.001$), Depersonalization ($p = 0.023$), and Personal Accomplishment ($p < 0.001$). A combined high-burnout profile across all three MBI dimensions was observed in 19 participants (7.6%). Self-distraction (5.08 ± 1.61), acceptance (4.97 ± 1.85), positive reframing (4.93 ± 1.81), planning (4.80 ± 1.74), and religion (4.77 ± 1.85) were among the more frequently reported coping strategies, whereas substance use was the least frequently reported (3.48 ± 1.48).

Conclusion: Burnout-related characteristics varied across different stages of physiotherapy education. The findings highlight the importance of identifying burnout and promoting effective coping strategies among physiotherapy students to support their psychological well-being and management of academic and clinical demands.

Keywords: Burnout; Coping Mechanisms; Physiotherapy Students; Maslach Burnout Inventory; Brief COPE; Cross-Sectional Study

Introduction

Physiotherapy education involves academic learning, practical training, and clinical exposure, which may expose students to considerable academic and clinical stress. Academic workload, examinations, clinical placements, patient-related experiences, and interactions within the clinical environment have been reported as important sources of stress among physiotherapy students. [1,2] Prolonged or inadequately managed stress may contribute to burnout and negatively affect students' psychological well-being and professional development.

Burnout among physiotherapy students has been investigated using multidimensional measures including Emotional Exhaustion, Depersonalization, and Personal Accomplishment. Previous studies have reported academic demands, clinical placement requirements, patient-related experiences, and transition to professional practice as important stressors. Physiotherapy students have also reported using various coping strategies, including social support, positive thinking, physical activity, and other approaches to manage stress. [3,4]

Coping mechanisms may influence how students respond to academic and clinical demands. While adaptive coping may support effective stress management, ineffective or maladaptive coping may contribute to difficulties in managing stress. Studies among physiotherapy students have demonstrated variation in stress, burnout, and coping experiences across different educational and clinical settings.[5,6] However, limited evidence is available regarding burnout-related characteristics and coping mechanisms across different stages of physiotherapy education in the Indian context.

Therefore, the present study was conducted to assess the prevalence of burnout syndrome and coping mechanisms among physiotherapy students and to compare burnout levels across different academic years, including first-year, second-year, third-year, fourth-year students, and interns. The study also aimed to identify the coping mechanisms used by physiotherapy students to manage academic and clinical stress.

Materials and Methods

Study Design and Setting

A cross-sectional observational study was conducted among physiotherapy students from different academic years in physiotherapy colleges in Pune, Maharashtra, India. The study included students from first year, second year, third year, fourth year, and internship.

Study Population

The study population consisted of physiotherapy students aged 18–25 years who were enrolled from first year through internship. A total of 250 participants were included in the study.

Sample Size and Sampling Technique

A sample of 250 physiotherapy students was included in the study. Participants were recruited using convenience sampling.

Inclusion Criteria

Participants were included if they:

1. Were physiotherapy students from first year through internship.
2. Were between 18 and 25 years of age.

3. Were willing to participate in the study.
4. Provided written informed consent.

Exclusion Criteria

Participants were excluded if they:

1. Had a diagnosed psychiatric or psychological disorder.
2. Were unwilling to participate in the study.

Outcome Measures

Maslach Burnout Inventory–Student Survey (MBI-SS): Burnout was assessed using the Maslach Burnout Inventory–Student Survey (MBI-SS), which assesses three dimensions: Emotional Exhaustion, Depersonalization and Personal Accomplishment. Higher Emotional Exhaustion and Depersonalization scores indicate greater burnout, whereas Personal Accomplishment is interpreted inversely, with lower scores indicating greater burnout-related impairment. [7]

Brief COPE Scale: Coping mechanisms were assessed using the Brief COPE Scale developed by Carver. The scale consists of 14 coping subscales, with each subscale comprising two items. Higher scores indicate greater use of the respective coping strategy. [8]

Data Collection Procedure

After obtaining informed consent, eligible participants were recruited according to the inclusion and exclusion criteria. Relevant demographic information was collected from the participants. The participants completed the Maslach Burnout Inventory–Student Survey and the Brief COPE Scale. The collected data were compiled, coded, and organized for statistical analysis.

Ethical Considerations

Written informed consent was obtained from all participants before data collection. Confidentiality and privacy of the participants were maintained throughout the study. Ethical approval was obtained from the Institutional Ethics Committee of Tilak Maharashtra Vidyapeeth, Pune, prior to commencement of the study.

Statistical Analysis

The collected data were compiled, coded, and analysed using appropriate statistical methods. Descriptive statistics were used to summarize participant characteristics and questionnaire scores. Mean and standard deviation were used for continuous variables, while frequency and percentage were used for categorical variables.

One-way analysis of variance (ANOVA) was used to compare the mean scores of the three MBI dimensions across the five academic-year groups. Tukey's HSD post-hoc test was performed for pairwise comparisons following significant ANOVA results.

The association between MBI burnout classifications and academic year was assessed using the Pearson chi-square test. Where expected cell frequencies were sparse, the Fisher-Freeman-Halton test with Monte Carlo estimation was used. Effect sizes were expressed using omega squared for ANOVA and Cramer's V for categorical associations. Holm adjustment was applied for multiple comparisons. Statistical significance was considered at $p < 0.05$.

Results

A total of 250 physiotherapy students participated in the study. The mean age was 21.30 ± 1.40 years (range: 19–24 years). Of the participants, 195 (78.0%) were female and 55 (22.0%) were male. The participants included first-year (22.4%), second-year (21.6%), third-year (20.4%), fourth-year (20.0%), and intern (15.6%) students.

Table 1. Participant Characteristics

Characteristic	Category/Statistic	Value
Age, years	Mean(SD)	21.30(1.40)
Age, years	Median(IQR)	21.00(2.00)
Age, years	Range	19-24
Gender	Female	195(78.0%)
Gender	Male	55(22.0%)
Academic year	1 st year	56(22.4%)
Academic year	2 nd year	54(21.6%)
Academic year	3 rd year	51(20.4%)
Academic year	4 th year	50(20.0%)
Academic year	Intern	39(15.6%)

Note: N = 250. Values are presented as mean (SD), median (IQR), range, or n (%), as appropriate.

Burnout classification across the three MBI dimensions is presented in Table 2. High burnout classification was observed in 13.6% of participants for Emotional Exhaustion and 32.8% for Depersonalization. For Personal Accomplishment, 76.0% were classified in the high-burnout category based on the inverse interpretation of the dimension. A combined high-burnout profile across all three dimensions was observed in 19 participants (7.6%).

Table 2 . Burnout classification according to MBI dimensions

MBI dimension	Low n (%)	Moderate n (%)	High n (%)
Emotional Exhaustion	131(52.4)	85(34.0)	34(13.6)
Depersonalization	96(38.4)	72(28.8)	82(32.8)
Personal Accomplishment	14(5.6)	46(18.4)	190(76.0)

Note: A combined high-burnout profile across all three dimensions was observed in 19 (7.6%) participants. *Personal Accomplishment is interpreted inversely; lower scores indicate greater burnout-related impairment.

MBI scores differed significantly across the five academic-year groups for all three dimensions (Table 3). The largest effect size was observed for Personal Accomplishment ($\omega^2=0.122$), followed by Emotional Exhaustion ($\omega^2=0.061$) and Depersonalization ($\omega^2=0.029$).

Table 3. MBI scores across academic years

Academic year	Emotional Exhaustion Mean $\pm$ SD	Depersonalization Mean $\pm$ SD	Personal Accomplishment Mean $\pm$ SD
First year	13.0 $\pm$ 2.6	7.1 $\pm$ 1.9	23.2 $\pm$ 2.6
Second year	17.1 $\pm$ 2.9	9.3 $\pm$ 2.3	22.3 $\pm$ 2.7
Third year	14.2 $\pm$ 3.4	8.3 $\pm$ 2.2	22.5 $\pm$ 3.0
Fourth year	19.5 $\pm$ 3.0	12.0 $\pm$ 2.4	28.7 $\pm$ 2.4
Intern	21.2 $\pm$ 3.9	10.4 $\pm$ 2.4	32.0 $\pm$ 2.5

ANOVA: Emotional Exhaustion: $F(4,245)=5.026$, $p<0.001$, $\omega^2=0.061$; Depersonalization: $F(4,245)=2.881$, $p=0.023$, $\omega^2=0.029$; Personal Accomplishment: $F(4,245)=9.690$, $p<0.001$, $\omega^2=0.122$.

Note: Higher Emotional Exhaustion and Depersonalization scores indicate greater burnout. Personal Accomplishment is interpreted inversely.

Tukey's HSD post-hoc analysis identified significant pairwise differences between selected academic-year groups across the MBI dimensions (Table 4)

Table 4 . Significant Post-Hoc Comparisons of Burnout Scores Across Academic Years

Burnout Section	Comparison	Mean Difference	95%CI	p-Value
Section A	4 th year VS 1 st year	6.355	0.629–12.081	0.021
Section A	Intern VS 1 st year	8.285	2.148–14.423	0.002
Section A	Intern VS 3 rd year	7.234	0.974–13.493	0.014
Section B	4 th VS 1 st year	4.762	0.590–8.934	0.016
Section C	4 th VS 1 st year	5.354	0.330–10.379	0.030
Section C	Intern VS 1 st year	8.663	3.277–14.049	<0.001
Section C	4 th year VS 2 nd year	6.399	1.331–11.468	0.006
Section C	Intern VS 2 nd year	9.708	4.281–15.135	<0.001
Section C	4 th year VS 3 rd year	6.169	1.030–11.309	0.010
Section C	Intern VS 3 rd year	9.478	3.985–14.971	<0.001

Note: CI = confidence interval. Mean differences are based on Tukey HSD pairwise comparisons. Section C is inversely interpreted; therefore, a higher raw Section C score indicates lower burnout on this dimension.

Burnout classification was significantly associated with academic year for all three MBI dimensions. Significant associations were observed for Emotional Exhaustion ($p=0.023$), Depersonalization ($p=0.030$), and Personal Accomplishment ($p<0.001$). The strongest association was observed for Personal Accomplishment (Cramer's $V=0.287$).

Table 5. Association between burnout classification and academic year

MBI dimension	Test	Statistic	df	p-value	Cramer's V
Emotional Exhaustion	Pearson chi-square	19.757	8	0.023	0.199
Depersonalization	Pearson chi-square	17.000	8	0.030	0.184
Personal Accomplishment	Fisher-Freeman-Halton Monte Carlo	41.212	8	<0.001	0.287

Among the 14 Brief COPE subscales, self-distraction had the highest mean score (5.08 ± 1.61), followed by acceptance (4.97 ± 1.85), positive reframing (4.93 ± 1.81), planning (4.80 ± 1.74), and religion (4.77 ± 1.85). Substance use had the lowest mean score (3.48 ± 1.48).

Table 6. Descriptive Statistics of Brief COPE Subscales

Brief COPE Subscale	Mean	SD	95% CI
Self-distraction	5.08	1.61	4.88–5.28
Acceptance	4.97	1.85	4.74–5.20
Positive reframing	4.93	1.81	4.71–5.16
Planning	4.8	1.74	4.58–5.02
Religion	4.77	1.85	4.54–5.00
Active coping	4.75	1.77	4.53–4.97
Emotional support	4.57	1.76	4.35–4.79
Instrumental support	4.57	1.79	4.35–4.80
Venting	4.44	1.71	4.23–4.66
Self-blame	4.31	1.86	4.08–4.54
Humor	4.13	1.86	3.90–4.36
Behavioral disengagement	4.03	1.84	3.80–4.26
Denial	3.97	1.9	3.74–4.21
Substance use	3.48	1.48	3.29–3.66

Note: SD = standard deviation; CI = confidence interval. Each Brief COPE subscale had a possible score range of 2–8. Higher scores indicate greater use of the respective coping strategy.

Discussion

The present study assessed burnout-related characteristics and coping mechanisms among physiotherapy students across different stages of physiotherapy education. Significant differences were observed across the three dimensions of the Maslach Burnout Inventory between academic-year groups. A combined high-burnout profile across all three dimensions was observed in 7.6% of participants. Among the coping mechanisms assessed using the Brief COPE, self-distraction, acceptance, positive reframing,

planning, and religion were among the more frequently reported strategies, whereas substance use was least frequently reported.

Emotional Exhaustion and Depersonalization scores were generally higher among students in the later stages of physiotherapy education, particularly fourth-year students and interns. This may be related to the increasing academic and clinical responsibilities encountered during the later stages of training. Students at these stages are required to integrate theoretical knowledge with clinical reasoning, patient assessment, treatment planning, documentation, and direct patient care, in addition to academic and practical requirements. Similar academic and clinical stressors have been reported among physiotherapy students in previous studies. [1,9]

Personal Accomplishment showed a different pattern from Emotional Exhaustion and Depersonalization. Higher Personal Accomplishment scores indicate better perceived accomplishment and lower burnout-related impairment in this dimension. In the present study, Personal Accomplishment scores were higher among fourth-year students and interns than among students in earlier academic years. This may reflect increased clinical exposure, development of professional competence, and greater confidence as students progress towards professional practice.

The study also identified a range of coping mechanisms used by physiotherapy students. Self-distraction had the highest mean score, followed by acceptance, positive reframing, planning, and religion. These findings indicate the use of both problem-focused and emotion-focused coping strategies. Previous studies among physiotherapy students have reported the use of social support, physical activity, positive thinking, mindfulness, music, and other coping strategies in response to academic and clinical stress. [4,6] The relatively low use of substance use in the present study is noteworthy. However, the frequency of use of a coping strategy does not necessarily indicate its effectiveness.

The findings suggest that burnout-related characteristics may vary according to the stage of physiotherapy education. Early-year students may experience adjustment to academic demands, whereas senior students and interns may encounter greater clinical responsibilities and preparation for professional practice. Student-support and stress-management strategies may therefore benefit from considering the different academic and clinical demands experienced at each stage of physiotherapy education.

Limitations

The study had certain limitations. First, convenience sampling may have limited the representativeness of the sample. Second, the study was conducted in a limited geographical setting, which may restrict the generalizability of the findings to physiotherapy students in other regions. Third, the cross-sectional design does not permit the establishment of causal relationships between academic stage, burnout, and coping mechanisms.

Conclusion

The present study found significant differences in burnout-related characteristics across different stages of physiotherapy education, with significant variation observed across all three dimensions of the Maslach Burnout Inventory. A combined high-burnout profile across all three dimensions was observed in 7.6% of participants. Self-distraction, acceptance, positive reframing, planning, and religion were among the more frequently reported coping strategies, whereas substance use was least frequently reported. These findings highlight the importance of identifying burnout-related difficulties at different

stages of physiotherapy education and promoting appropriate coping and student-support strategies to support students' psychological well-being and management of academic and clinical demands.

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