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COMPARATIVE STUDY OF STRESS LEVELS IN CLINICAL VS NON-CLINICAL YEARS AMONG UNDERGRADUATE MEDICAL STUDENTS IN PESHAWAR

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Abstract
Many students report high levels of psychological stress as a result of the heavy cognitive and emotional demands of medical school. Undergraduate medical students in Peshawar were the subjects of this study, which sought to assess their levels of felt stress during their clinical and non-clinical years. Higher levels of stress were found among clinical-year students in a cross-sectional study using the Perceived Stress Scale (PSS-10). The results underscore the need of developing individualized plans to alleviate stress among students based on their current academic standing.

Introduction

Stress is a common psychological concern among medical students globally, resulting from the rigorous and high-pressure academic setting. Although moderate stress might improve performance, excessive and chronic stress can adversely affect cognitive function, academic achievement, and long-term mental health (1,2).

Medical education in Pakistan encompasses five years, typically segmented into pre-clinical (Years 1–2), para-clinical (Year 3), and clinical years (Years 4–5). Each phase presents distinct stressors: the pre-clinical years emphasize theoretical learning and adaptation to a competitive milieu, whereas the clinical years entail responsibilities related to actual patient interactions, hospital rounds, and the practical application of knowledge, frequently under time constraints and with insufficient emotional readiness (3–5).

In Pakistan, few research has examined this disparate stress burden. The majority have indicated elevated overall stress levels but have not explicitly contrasted academic phases (6–8). This research aimed to address this deficiency by comparing stress levels across clinical and non-clinical years among students from three medical colleges in Peshawar.

Methodology

Study Design and Setting

A cross-sectional, quantitative study was conducted from March to May 2025 at Khyber Medical College, Rehman Medical Institute, and Peshawar Medical College.

Sample and Participants

A total of 400 MBBS students were selected using stratified random sampling, with equal representation from clinical and non-clinical years (n = 200 each). After exclusion of incomplete responses, data from 380 participants were analyzed.

Inclusion Criteria

- Full-time MBBS students in 1st, 2nd, 4th, or 5th years
- Consent to participate voluntarily

Exclusion Criteria

- Third-year students (para-clinical phase)
- Students with known psychiatric illness
- Repeat-year students

Data Collection Instrument

The Perceived Stress Scale (PSS-10) by Cohen et al. (11) was used. It measures perceived stress over the past month with scores ranging from 0 to 40, where higher scores indicate greater stress. The questionnaire also included demographic data and self-identified stressors.

Data Analysis

SPSS v26 was used for analysis. Independent t-tests compared mean PSS scores. Chi-square tests examined associations between stress severity and academic year. A p-value <0.05 was considered statistically significant.

Results

Table 1: Demographic Characteristics of Participants (n=380)

Variable	Non-Clinical (n=190)	Clinical (n=190)	p-value
Mean Age (years)	19.2 ± 1.1	22.6 ± 1.3	<0.001
Female (%)	56%	54%	0.720
Urban Background	61%	59%	0.800

Table 2: Perceived Stress Scores by Group

Group	Mean PSS Score ± SD	p-value
Non-Clinical	21.1 ± 4.9	
Clinical	24.6 ± 5.3	<0.001

Table 3: Stress Severity Categories

Stress Category	Non-Clinical (n=190)	Clinical (n=190)
Low (0–13)	12% (n=23)	4% (n=8)
Moderate (14–26)	71% (n=135)	62% (n=118)
High (27–40)	17% (n=32)	34% (n=64)

Table 4: Commonly Reported Stressors by Academic Phase

Stressor	Non-Clinical (%)	Clinical (%)
Academic pressure	72%	79%
Examination anxiety	76%	58%
Fear of patient interaction	21%	82%
Sleep deprivation	48%	59%
Career uncertainty	44%	68%
Emotional exhaustion	35%	66%
Social/family pressure	41%	39%

Discussion

The current study indicates a statistically significant disparity in perceived stress levels between clinical and non-clinical undergraduate medical students in Peshawar, with clinical-year students exhibiting elevated mean stress ratings. These findings complement analogous research conducted worldwide (12–14), demonstrating that the stress trajectory among medical students escalates as they advance through their academic path.

Stress During Clinical Years

Students in their clinical year reported elevated stress levels, aligning with the psychological demands of hospital rotations, heightened patient responsibilities, and the application of theoretical knowledge in real-time decision-making. Previous data indicates that clinical exposure frequently results in performance anxiety, ethical difficulties, apprehension over therapeutic errors, and emotional tiredness, especially in the context of suffering or terminally ill patients (15–17).

Moreover, clinical students have increasing apprehensions over prospective career options, licensure examinations, internships, and postgraduate placements. If neglected, these cumulative demands frequently lead to chronic stress and burnout (18,19).

Stress During Non-Clinical Years

Non-clinical students demonstrated moderate stress levels, mostly attributed to academic transitions, elevated parental expectations, and challenges in adapting to the regimented curriculum. This corroborates previous studies suggesting that the early years of medical education present psychological difficulties associated with identity development and academic perseverance (20,21).

Notably, non-clinical students exhibited higher levels of examination anxiety than their clinical counterparts. This may be ascribed to the novel assessment methods (e.g., MCQs, viva) and increased pressure to excel intellectually to advance to the clinical phase. Implications for Curriculum and Support Systems

The statistics underscore the necessity for a dual-tiered strategy regarding student mental health. For non-clinical students, early mentorship initiatives, academic skills workshops, and transitional counseling may facilitate adaption. Stress-reduction programs for clinical students that emphasize emotional intelligence, managing patient relationships, and time management may be more suitable (22–24).

The findings necessitate a focus on implementing confidential psychological support services, peer mentorship programs, and organized breaks or mindfulness activities within institutions. Curricular innovations, including incremental clinical exposure, simulation-based training, and student-centered learning, may mitigate stress by fostering competence and confidence early in the program (25,26).

Advantages and Disadvantages

The study's robustness is attributed to its multi-institutional sample and the application of a validated psychometric instrument. Nonetheless, drawbacks encompass its cross-sectional design, which inhibits causal inference, and the possibility of self-reporting bias in the identification of stressors.

Future longitudinal studies will elucidate the progression of stress and assess the sustained effectiveness of institutional solutions.

Conclusion

The research indicates markedly elevated stress levels in clinical-year students relative to their non-clinical peers. These findings illustrate the changing nature of stressors in medical education and underscore the critical necessity for customized, phase-specific support methods. By proactively mitigating psychological suffering, medical institutions can cultivate healthier learning environments and produce more adept future physicians.

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