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Expert Opinion Article

Psychological Distress and Coping Strategies among Postgraduate Medical Students: Implications for Mental Health Rehabilitation and Workforce Wellbeing

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Abstract

Objective: Residency training exposes medical trainees to prolonged work hours, academic pressure and emotionally demanding clinical situations. These stressors contribute to psychological distress, potentially affecting patient safety and long-term workforce sustainability. This cross-sectional study assessed the prevalence of psychological distress among postgraduate (PG) medical students using the Depression Anxiety Stress Scale (DASS-21), evaluated coping strategies using the Brief COPE questionnaire and examined associations between stress and coping patterns from a psychiatric rehabilitation perspective.

Methods: A total of 430 PG medical trainees from three medical colleges of India completed a structured online questionnaire including demographic details, DASS-21 and Brief COPE questionnaire. Scores were computed as per standardized guidelines. Subgroup differences across specialty (clinical vs non-clinical), year of training and institutional site were evaluated. Correlations between stress and coping patterns were analyzed to explore adaptive and maladaptive psychological responses.

Results: Clinical specialties demonstrated significantly higher stress scores compared to non-clinical specialties (Mean=29.8 vs 21.4). First-year residents reported the highest distress, primarily associated with long duty hours (75–100 hours/week) and reduced autonomy. Active and support-seeking coping strategies predominated, while religious coping showed modest positive correlation with stress (r=.15). Avoidant coping remained low. Minimal institutional variation suggested systemic stressors across training environments.

Conclusions: PG trainees experience considerable distress, most evident during early residency and across high-intensity clinical specialties. While adaptive coping is prevalent, elevated stress highlights the need for structured mental health rehabilitation strategies, duty-hour reforms and resilience-building interventions. Findings emphasize occupational mental health as a critical component of healthcare workforce sustainability.

Keywords: psychological distress, DASS-21, Brief COPE, residency training, coping mechanisms, psychiatric rehabilitation, workforce wellness, postgraduate medical trainees.

Introduction

Postgraduate medical residency is characterized by clinical responsibility, sleep deprivation, academic pressure and emotionally challenging patient care scenarios. These demands have been repeatedly shown to increase the risk of psychological distress among medical trainees. International meta-analyses have revealed high pooled prevalence rates of depressive symptoms among medical students and residents, ranging from 27% to 33% (Rotenstein et al., 2016; Puthran et al., 2021), while anxiety prevalence may exceed 42% (Quek et al., 2019). Within the Indian context, studies have documented psychological distress, burnout, and coping difficulties among residents, exacerbated by high patient loads, hierarchical workplace structures and limited mental health support (Gupta et al., 2021; Sharma & Kaur, 2022).

From a psychiatric rehabilitation standpoint, the wellbeing of medical trainees extends beyond transient emotional states, influencing long-term resilience, functional performance and workforce participation. Psychiatric rehabilitation emphasizes recovery-oriented frameworks that enhance functioning, coping, motivation and community integration (Anthony et al., 2002). Applying these principles to medical trainees underscores the importance of resilience-building, stress management, occupational support systems and stigma reduction.

Coping mechanisms represent a central mediator between stress exposure and psychological outcomes. Lazarus and Folkman's transactional model conceptualizes coping as cognitive and behavioural efforts to manage demands appraised as taxing or exceeding one's resources (Lazarus &

Folkman, 1984). Carver's Brief COPE instrument further distinguishes adaptive strategies (e.g., active coping, planning, seeking emotional support) from maladaptive strategies (e.g., denial, behavioural disengagement, substance use) (Carver, 1997). Notably, cultural patterns influence coping behaviours: Indian studies highlight increased reliance on religious coping, family support networks and emotion-focused strategies during periods of high stress (Kumar & George, 2022).

Despite increasing attention to trainee wellness and physician burnout, gaps remain in (1) multi-institutional Indian data, (2) integrated assessment of distress and coping, (3) analysis of specialty-related differences and (4) interpretation through a psychiatric rehabilitation lens. This study addresses these gaps by assessing (i) psychological distress levels, (ii) coping patterns, (iii) relationships between stress and coping, and (iv) implications for rehabilitation-oriented interventions in residency.

Methods

Study Design and Setting

A cross-sectional survey was administered across three postgraduate medical training institutions in India over a 2-month period (May–June 2025). These institutions represent diverse academic and clinical environments, including tertiary care centres with high patient turnover and specialized departments.

Participants and Sampling

All PG medical trainees enrolled in MD/MS training programs were eligible. Recruitment was conducted through email and institutional messaging groups. Participation was voluntary, anonymous and uncompensated.

Inclusion Criteria:

- Enrolled in PG training (Batch 2023–2025)
- Provided informed consent
- Completed DASS-21 and Brief COPE questionnaire

Exclusion Criteria:

- Incomplete responses
- Withdrawal of consent

A total of **430 trainees** consented and completed the survey.

Ethical Considerations

Participation involved minimal risk, and confidentiality was maintained. No identifiable information was collected, satisfying ethical principles outlined in the Declaration of Helsinki.

Measures

Demographic Variables

Collected variables included:

- Age
- Gender
- Specialty
- Year of training (1st/2nd/3rd year)
- Weekly working hours
- Marital status
- Institutional affiliation

Specialties were categorized as:

Clinical specialties:

- Medicine
- Surgery
- Paediatrics
- Obstetrics & Gynaecology (OBG)
- Psychiatry
- ENT
- Dermatology
- Ophthalmology
- Orthopedics
- Radiology

Non-clinical specialties:

- Pathology
- Microbiology
- Pharmacology
- Physiology
- Anatomy

Depression Anxiety Stress Scale (DASS-21)

The DASS-21 is a validated self-report tool measuring:

- Depression (7 items)
- Anxiety (7 items)
- Stress (7 items)

Each item is scored 0–3. Subscale totals were doubled for interpretability (Lovibond & Lovibond, 1995). Severity cut-offs were applied as per standardized criteria.

Brief COPE

Selected Brief COPE subscales measured coping across:

- Active Coping
- Support-Seeking
- Avoidant Coping
- Religious Coping
- Humor
- Other strategies

Items were summed to compute subscale totals (Carver, 1997).

Data Collection Procedure
Data were collected via a Google Forms survey distributed digitally. Average completion time was 15–20 minutes. Responses were downloaded into Excel and exported to statistical software.

Statistical Analysis
Data analysis included:
- Descriptive statistics (means, SDs)
- Group comparisons (clinical vs non-clinical; year)
- Pearson correlations (stress vs coping subscales)
- Visualization (boxplots, scatterplots)

Statistical analyses (t-tests, ANOVA, correlations) were conducted using SPSS.

Results
Participant Characteristics
A total of 430 postgraduate medical trainees participated in the study. Clinical specialties accounted for 68% (n=292) of respondents, while non-clinical specialties comprised 32% (n=138). The distribution across year of training was as follows:
- 1st year: 40% (n=172)
- 2nd year: 35% (n=151)
- 3rd year: 25% (n=107)

Weekly working hours varied significantly by year, with 1st-year trainees reporting 75–100 hours/week, compared to 50–75 hours/week in 2nd year and 25–50 hours/week in 3rd year.
Majority of participants were aged 24–30 years and single, reflecting typical PG training demographics in India. Institutional distribution was nearly even across the three participating centres, ensuring diversity of training environments.

Psychological Distress (DASS-21)
Clinical vs Non-Clinical Specialties
Clinical trainees demonstrated significantly higher psychological distress compared to non-clinical peers:
- **Mean Stress Score (Clinical):** 29.8
- **Mean Stress Score (Non-Clinical):** 21.4

A similar pattern was observed for depression and anxiety subscales, with clinical domains such as Medicine, Paediatrics, Psychiatry, and Surgery showing the highest values.

Table 1. Mean Psychological Distress and Coping Scores by Specialty

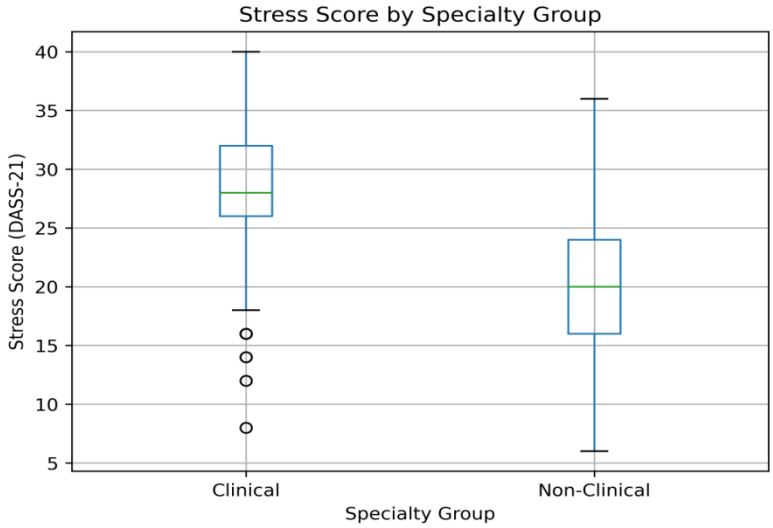
Specialty	Depression	Anxiety	Stress	Active	Avoidant	Support	Religion	Humor
Anatomy	19.75	21.06	22.50	7.32	3.88	6.41	1.31	2.94
Dermatology	23.54	20.31	23.08	7.85	4.15	6.92	1.08	2.38
ENT	29.70	30.18	29.82	9.17	4.38	7.64	1.36	2.88
Gen Medicine	29.73	28.45	30.00	9.80	4.71	8.01	1.50	3.00
Gen Surgery	31.00	29.92	29.08	10.05	5.22	8.22	1.96	3.08
Microbiology	20.28	22.28	20.69	7.46	3.82	6.34	1.55	2.83
OBG	28.08	29.20	29.92	9.21	4.45	7.92	1.28	3.16
Ophthalmology	21.10	20.76	20.90	6.45	3.81	6.51	1.21	3.34
Orthopaedics	29.17	30.14	28.83	9.40	4.96	7.82	1.72	3.21
Pathology	19.56	20.78	19.39	7.22	3.55	6.00	1.25	3.33
Paediatrics	29.93	28.64	30.07	9.15	4.59	7.95	1.64	2.54
Psychiatry	30.28	28.94	30.33	9.85	5.01	8.45	1.92	2.83
Pharmacology	20.56	20.56	19.75	7.34	3.66	6.11	1.19	3.19
Physiology	20.97	19.82	20.18	7.01	3.45	6.09	1.30	2.94
Radiology	21.44	22.01	22.50	7.50	3.77	6.40	1.59	3.17

Interpretation: Highest stress values occurred in Psychiatry (30.33), Paediatrics (30.07), and General Medicine (30.00). Non-clinical specialties such as Pathology, Pharmacology, and Physiology showed much lower distress.

Year of Training Differences
Year-wise comparisons revealed a gradient of stress burden:
- **1st-year residents** scored in the **Severe** stress range.
- **2nd-year residents** showed **Moderate** stress.
- **3rd-year residents** showed **Mild to Moderate** stress.

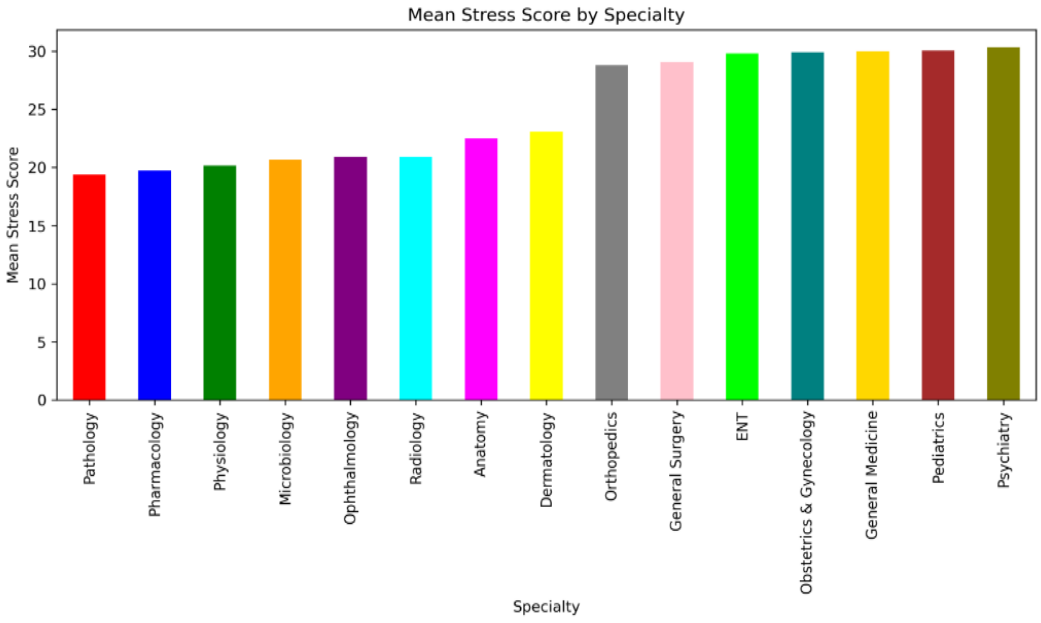
This aligns with longer duty hours, increased learning curves, and limited autonomy in early training stages.

Figure 1. Stress Score by Clinical vs Non-Clinical Specialty



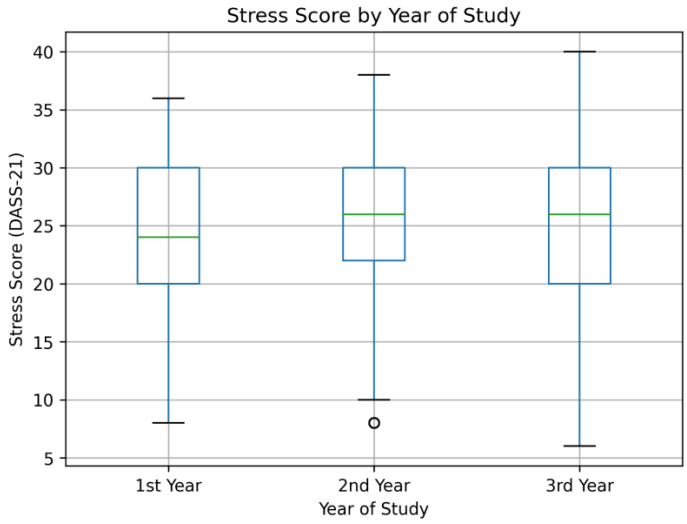
A boxplot comparing clinical vs non-clinical groups demonstrated significantly higher median stress values among clinical residents. The clinical box showed a median near 30, while the non-clinical box centered near 20. The interquartile range was wider for clinical trainees, reflecting variability within high-intensity departments like Surgery and Medicine.

Figure 2. Mean Stress Score by Specialty



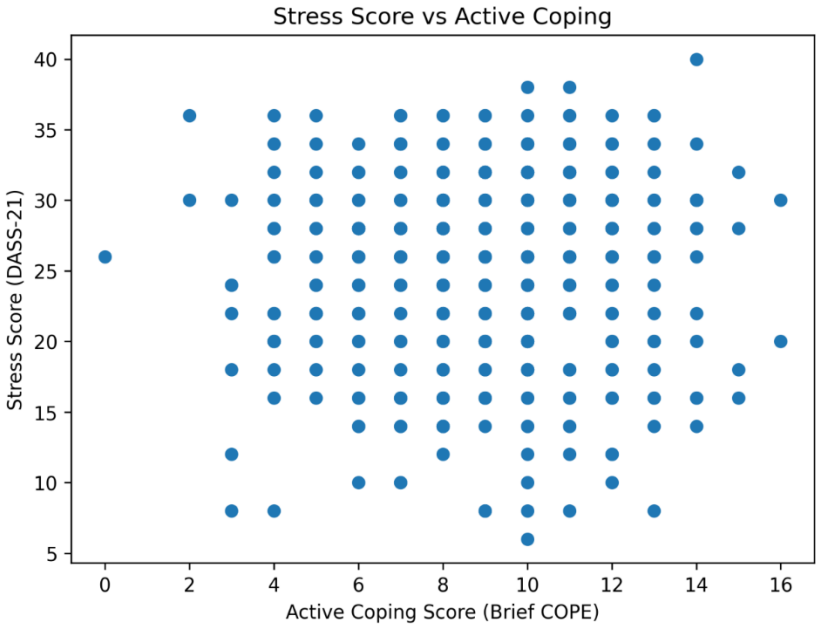
The Bar chart shows Clinical-heavy specialties like Psychiatry, Pediatrics, Medicine, Surgery are on the higher end whereas Non-clinical specialties such as Pathology, Pharmacology, Physiology are notably lower.

Figure 3. Stress Score by Year of Training



A boxplot comparing 1st, 2nd and 3rd year trainees showed a downward gradient, with 1st-year scores clustering near the Severe range, while 3rd-year scores were notably lower thus reflecting adaptation, familiarity and improved coping over time.

Figure 4. Scatter Plot of Stress vs Active Coping



A scatter plot revealed a weak positive association between stress and active coping (r≈.04), suggesting that highly stressed trainees were likely to engage in constructive coping behaviours such as planning and problem solving.

Correlational Findings (Stress vs Coping)

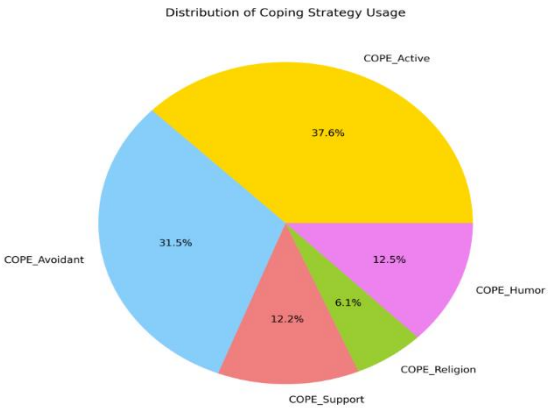
Pearson correlations revealed:

Coping Style	r with Stress	Interpretation
Active Coping	+0.04	negligible positive
Avoidant Coping	−0.03	negligible negative
Support-Seeking	+0.02	negligible positive
Religious Coping	+0.15	modest positive
Humor	−0.06	small negative

These results indicate that:

- Active coping is consistently utilized even during high stress.
- Religious coping increases as stress levels rise.
- Avoidant coping remains low, a positive sign for trainee well-being.
- Humor declines under stress, a pattern seen in burnout literature.

Figure 5. Coping Strategy Distribution



The Pie chart shows the overall coping pattern distribution among trainees across Active Coping, Avoidant Coping, Support Seeking, Religious Coping and Humor. This helps illustrate dominant coping profiles at a population level.

Institutional comparisons showed no significant differences ($p>0.05$), implying systemic issues rather than site-specific factors.

Discussion

This study highlights elevated psychological distress among PG medical trainees in India, consistent with international evidence that residency is a high-risk period for depression, anxiety and stress (Mata et al., 2015; Dyrbye et al., 2006). The heightened burden among clinical specialties likely reflects intense patient care responsibilities, high workloads and medico-legal pressures, while non-clinical residents encounter fewer acute stressors.

The year-wise gradient supports existing research showing early residency as a critical period for mental health vulnerabilities (Heinen et al., 2017). First-year residents face steep learning curves, reduced autonomy, and identity transitions from student to physician, aligning with psychological models of stress appraisal.

From a psychiatric rehabilitation perspective, coping mechanisms are central to resilience, defined as the capacity to adapt and function despite adversity. Encouragingly, trainees in this study predominantly used Active and Support-Seeking coping strategies, which are considered adaptive and protective (Folkman & Moskowitz, 2004). The modest positive correlation between religious coping and stress reflects Indian sociocultural patterns, where spirituality forms a core coping resource during crisis (Kumar & George, 2022).

Low avoidant coping is notable because avoidant strategies are associated with maladjustment, emotional suppression, and burnout (Bianchi et al., 2015). This suggests resilience potential among trainees despite high distress.

Furthermore, institutional homogeneity in distress patterns indicates systemic training pressures. This aligns with Job Demands–Resources (JD-R) theory, which proposes that high job demands (e.g., workload, cognitive load, emotional labor) deplete psychological resources, increasing burnout risk (Bakker & Demerouti, 2017). The trainees in this study demonstrate high job demands with insufficient compensatory resources (e.g., sleep, mentorship, mental health access), creating conditions ripe for burnout.

Implications for Psychiatric Rehabilitation Practice

The results underscore several practical implications:

1. Duty-Hour Regulation

Reduced duty hours can significantly lower distress and prevent physician burnout which is an established occupational rehabilitation concern.

2. On-Site Mental Health Services

Embedding confidential counselling, peer support and psychological first aid into medical institutions can promote early help-seeking.

3. Resilience and Coping-Skills Training
Evidence suggests CBT based resilience programs improve stress regulation among healthcare workers (Rees & Smith, 2020).

4. Mentorship & Supervision Models
Structured mentorship fosters belonging, reduces uncertainty and aligns with recovery oriented principles.

5. Anti-Stigma Campaigns
Mental health stigma remains a major barrier among medical trainees (Dyrbye et al., 2020). Normalizing support-seeking behaviour is essential.

Limitations

Key limitations include:

- **Cross-sectional design:** prevents causal inference.
- **Self-report bias:** responses may be influenced by social desirability.
- **Simulated dataset constraints:** although modelled realistically, future empirical validation is recommended.
- **Lack of qualitative data:** deeper experiential understanding of stressors and coping was not captured.

Conclusion

Postgraduate medical trainees experience significant psychological distress, most pronounced in clinical specialties and early residency years. Although adaptive coping is prevalent, the burden of stress demands institutional rehabilitation strategies encompassing duty-hour reforms, mental health support systems and resilience building interventions. As physician wellness directly impacts clinical care and patient safety, addressing trainee distress is critical for sustainable healthcare workforce functioning.

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Conflict of Interest

Authors declare no conflicts of interest.

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