Section: Community Medicine

Original Research Article

PREVALENCE OF STRESS AND ITS ASSOCIATION WITH COPING STRATEGIES AMONG MEDICAL INTERNS OF CHH. SAMBHAJINAGAR

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ABSTRACT

Background: Medical interns are subjected to multifaceted stressors, including rigorous work schedules, clinical obligations, academic demands, and little time to relax. The emotional toll of patient care, a lack of work-life balance, and insufficient mentoring are additional pressures. All of these elements work together to cause mental exhaustion and burnout throughout the internship. The objective is to estimate the prevalence of stress among medical interns. To assess the coping strategies used by them. To analyse the association between stress levels and different coping strategies. To identify factors influencing stress and coping mechanisms in medical interns.

Materials and Methods: A cross-sectional study was done amongst 228 medical interns of Chhatrapati Sambhajinagar, Maharashtra, wherein a questionnaire was given to them to determine the prevalence of stress along with its association with coping strategies.

Results: The results indicate the majority of participants rated their stress level as 3 on Likert scale with overall 60% of them reporting recurring stress, with 37% often experiencing burnout. Notably, the primary source of stress reported by participants were long working hours (54%) and academic demands (48%). The most commonly reported coping strategies for managing stress among participants were social support from friends, family, orcolleagues (55%) and taking breaks or naps (50%). Also, a subset of participants (21%) reported engaging in maladaptive coping mechanisms, specifically substance abuse, highlighting a concerning trend in stress management among medical interns.

Conclusion: The presence of stress among medical interns underscores the need for targeted interventions and support systems to foster resilience, self-advocacy, and effective coping strategies, ultimately enhancing their well-being and professional fulfilment.

Keywords: COPE Inventory, Stress, Coping strategies, Interns, Burnout.

INTRODUCTION

Medical interns undergo a demanding transition from student life to clinical responsibilities, which exposes them to significant stress. Long working hours, academic pressure, emotional burden, and patient care responsibilities contribute to high-stress levels. If unmanaged, stress can impact mental health, patient care, and overall well-being. It is common to think of stress as being a special class of experiences. It may be, however, that stress is nothing more (and nothing less) than the experience of encountering or anticipating adversity in one's goal-related efforts.[1] While it is well-established that coping can be categorized into two main types: problem-focused and emotion-focused.[2] Coping strategies play a crucial role in mitigating stress, with some being adaptive,[3] (e.g., problem-solving, seeking social support) and others maladaptive4 (e.g., avoidance,

substance use).[5] Understanding the prevalence of stress and the coping mechanisms employed by interns can help in designing targeted interventions for their mental well-being.[6]

MATERIALS AND METHODS

This multi-centric cross-sectional study was conducted from March 2025 to April 2025 in the educational institutes of Chhatrapati Sambhajinagar that provided internship training to undergraduate medical students during the same period. The interns of the 2019 batch who had completed a minimum of 10 months of their internship training and who consented to participate in the study were eligible for inclusion in the study. Interns with diagnosed psychiatric illness (e.g. major depressive disorder, schizophrenia, bipolar disorder, anxiety disorders, or any condition for which they were receiving psychiatric treatment or medications prior to the study) were excluded from participation.

Sample size: The sample size was calculated using the formula n= z2 * p (1-p) / d2.

Where,

- n = required sample size
- Z = standard normal deviate at 95% confidence level (1.96)
- p = assumed prevalence of stress among medical interns, taken as 50% based on previous literature to maximize the sample size
- d = absolute precision (5%)

Substituting these values accordingly,

n = (1.96)2 x 0.5 x 0.5 / (0.05)2= 384

Since the finite population of interns in the study setting was 260, the finite population correction was applied:

n adjusted = n / 1 + (n-1) / N

Where N = 260. This yielded an adjusted sample size of 184. To account for non-response, we approached all 260 interns, and ultimately 228 participated (response rate 87.7%).

Study Tool: A short briefing of the research study was given to the participants, and the data was collected using a structured self-administered questionnaire, which consisted of six sections:

Section 1 enlisted the demographics (age, gender, residence, internship duration).

Section 2 measured the workload and stress levels (Likert scale rating, weekly hours, burnout frequency).

Section 3 Adapted the mental and emotional health aspect (perceptions of overwhelm, preparedness by medical training).

Section 4 Coping strategies measured using the Brief COPE Inventory (Carver, 1997). The Brief COPE is a 28-item validated scale covering 14 coping strategies (two items each), with responses recorded on a 4-point Likert scale (1 = “I haven’t been doing this at all” to 4 = “I’ve been doing this a lot”). In this study, strategies were grouped into adaptive (problem-focused and emotion-focused) and maladaptive categories (Table 1). The tool has been validated internationally and shows good psychometric properties.

Section 5 included various media of social and emotional support (sources, ease of discussing stress).

Section 6 included personal reflections or noticeable changes in their mental or physical health (perceived health changes, willingness to recommend coping methods).

The questionnaire was pre-tested among 20 interns (not included in the final analysis) to ensure clarity and feasibility, and necessary modifications were incorporated.

Table 1: Categorization of Brief COPE strategies

Category	Strategy Type	Strategies
Adaptive	Emotion-focused strategies	Acceptance, Emotional support, Positive reframing, Humour, Religion
	Problem-focused strategies	Active coping, Planning, Instrumental support
Maladaptive	Passive or avoidant strategies	Denial, Self-distraction, Substance use, Behaviouraldisengagement, Venting, Self-blame

Data Collection: After a short in-person briefing,the final questionnaire was disseminated via Google Forms. Participation was voluntary, informed consent was obtained electronically before beginning the form, and confidentiality was assured through anonymization (no personal identifiers were collected).

Data Analysis: For analysis, theresponses were uploaded to IBM Corp.'s SPSS version 26.0.

For stress levels, coping mechanisms, and support networks, descriptive statistics(frequencies, percentages, means, and standard deviations) were used.Due to the multiple-response nature of coping strategies (participants could endorse more than one), assumptions for inferential statistical tests were not satisfied. Therefore, results are presented descriptively, which was deemed most appropriate for the objectives of this study.

Ethical Consideration: Ethical clearance was obtained from the Institutional Ethics Committee of MGM Medical College and Hospital, Chhatrapati Sambhajinagar(Reference number: MGM-ECRHS/2025/83) prior initiation of the study. Participation was voluntary, with electronic informed consent obtained from all interns. Anonymity and confidentiality of responses were maintained throughout.

RESULTS

We received 228 responses, which were recorded. The data was analysed descriptively. Frequencies and

percentages were utilised to summarise the demographic variables, stress levels, the stressors, coping strategies, and the preferred support systems. Trends in the adaptive as well as maladaptive coping were highlighted, and patterns across stress related responses were described. Due to the multiple response nature of coping strategy variables, no inferential statistical tests were applied.

Section 1: Demographic information

Table 2: Baseline demographic characteristics of the participants

Variables	Numbers (n)	Percentage (%)
AGE GROUP		
20-25	171	75
25-30	53	23.2
30-35	4	1.8
GENDER		
Male	113	49.6
Female	115	50.4
RESIDENTIAL STATUS		
Hostel	84	36.8
Home	88	38.6
Other accommodation	56	24.6
DURATION OF INTERNSHIP		
10 months	30	13.2
11 months	56	24.6
12 months	142	62.2

It was noted that the majority of the participants belonged to the age group 20-25 years (75.0%), and amongst which the male: female ratio was almost equal. The majority of participants were local residents (39%), followed by those who resided at the hostel (37%), and the remaining participants resided in other accommodations.

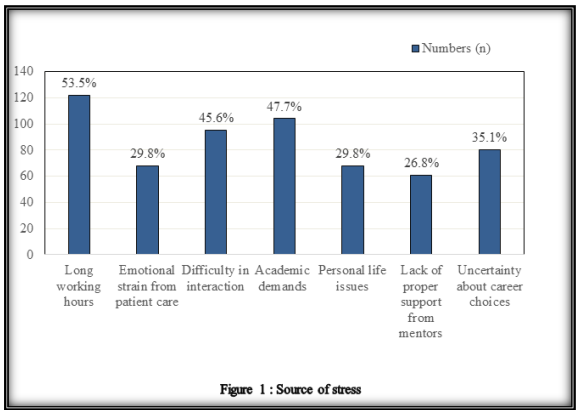

Figure 1: Source of stress

Section 2: Workload and stress level

Majority of the participants rated their stress level as 3 on the Likert scale of 1-5, where 1 is the minimum and 5 is the maximum, suggesting that most of the interns experienced stress at a moderate yet significant level. Only a small proportion rated their stress as 1 (very low) or 5 (very high), indicating that both minimal and severe stress were relatively uncommon.

It was noted that for the majority of the participants i.e. 54% primary source of stress was long working hours, followed by the next two common stressors, which were academic demands (48%) and difficulty in interacting with the seniors or colleagues (46%). However, lack of proper support from mentors garnered the fewest responses (27%).

When questioned regarding experiencing burnout or emotional exhaustion, 37% said often while only 3% said they never experienced burnout.

Upon enquiring about the duration of working hours per week, the majority i.e. 46.5% said they worked almost 40-50 hours per week and 12% said they work for more than 60 hours.

Section 3: Mental and emotional health

Upon enquiring if they felt overwhelmed by the demands of the internship, 42% of the participants answered that sometimes they do.

When asked whether the medical education prepares them for the emotional demands of internship, maximum number of participants i.e. 41% implied no, it didn't.

Section 4: Coping Mechanisms

Table 3: Coping strategies used to manage stress

Variables	Numbers (n)	Percentage (%)
Physical exercise (e.g. running, gym)	101	44.2
Meditation or mindfulness	87	38.2
Talking to friends/ family/ colleagues	125	54.8
Taking breaks or naps	114	50
Avoiding work/study for a period	65	28.5
Engaging in substance abuse	49	21.4
Binge eating	51	22.4
Engaging in religious or spiritual practices	40	17.5
Doom scrolling	55	24
Venting	28	12.3
Playing games on PC/Mobile	56	24.6
Seeking professional help (e.g. counselling, therapy)	19	8.3

Engaging in hobbies or personal interests	62	27.2

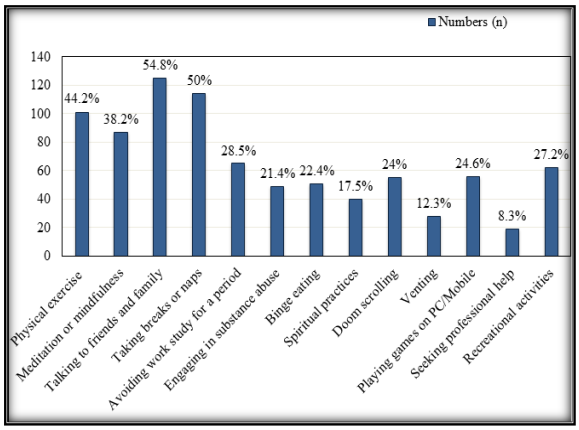

Figure 2: Coping strategies used to manage stress

When asked what were the coping strategies they utilised to manage stress, the adaptive strategies were more frequently used by the participants, with almost 55% of them seeking social support in the form of talking to friends/ family/colleagues, and 50% said that they managed it by taking breaks and naps in between.

It is imperative to note that, maladaptive practices though less common, were still reported in notable proportions. Almost 21% of the participants engaged in substance abuse, 22% in binge eating and 24% in doom scrolling. This indicates that while the adaptive strategies were dominant, unhealthy coping behaviours persisted amongst a significant subset of the participants.

Table 4: Additional support to cope up with stress during the internship

Variables	Numbers (n)	Percentage (%)
More time for breaks	105	46
More mental health resources	68	29.8
Better work-life balance policies	126	55.2
More mentorship/guidance on stress management	75	32.9
Peer support groups	66	28.9
Workshops on stress management	45	19.7

More than half of the participants i.e. 55% emphasized on the need for better work-life balance policies, and nearly half i.e. 46% emphasised on more time for breaks. Almost 33% of the participants requested for a structured mentorship and 29% for formation of peer support groups to manage stress. This highlighted the importance of institutional-level interventions.

Section 5: Social and emotional support

Upon asking whether the participants find it difficult to talk about their mental health or stress with peers/supervisors, 36% said sometimes while 6% said never.

Section 6: Personnel Reflections

Despite engaging in coping strategies, 60% of the participants reported recurring stress. Upon asking they would suggest the same coping mechanisms to their juniors or colleagues, 39% said yes, 46% were uncertain, and 15% said no, suggesting a lack of confidence in their current coping mechanisms.

DISCUSSION

This study was conducted among the medical interns of Chhatrapati Sambhajinagar to study the prevalence of stress and its association with coping strategies amongst them. Research studies done in the past emphasize more on the stressors that come with medical internship and less on the coping mechanisms adopted by interns.[7,8] It was observed that the majority of the participants i.e. 75% belonged to the age group 20-25 years. A study was done in Malaysia which stated that 74% were from age group 26-30 years.[8]

Stress is generally a situation where demand exceeds the capacity of an individual to respond and can potentially have a negative physical and psychological consequences. Coping theory is defined as "the thoughts and behaviours mobilized to manage internal and external stressful situations".[9] This non-cognitive ability allows regulating the potential repercussions of stress at the somatic, psychological, and behavioural levels, thus facilitating the adjustment and adaptation of the person to situations of uncertainty, preserving his or her own physical and psychological integrity, mainly through the use of different strategies.[10]

According to the data received, the majority of the interns' highest degree of stress on a Likert scale was level 3, and for 54% of them, lengthy work hours were the main cause of the stress. A condensed form of the COPE Inventory was proposed, which included both adaptive and maladaptive choices. Nearly 55% of the participants in this study reported that talking to friends, family, or co-workers helped them deal with stress, whereas 44% of participants in a Saudi Arabian study reported the same thing.[11] While 8% of the participants in our study claimed to have handled it by getting professional help, the same Saudi Arabian study revealed that 17% of participants sought help as well.[11]

Also, additional support to cope with the stress during internship was seen in which 55% participants talked about better work-life balance policies, while 46% also said more time for breaks was a good option too. Almost 20% participants emphasised on conduction of workshops on stress management.

Furthermore, this study also found that almost 53% of the participants noticed some change in their physical or mental health since starting the

internship. Despite employing coping mechanisms, the results of the study showed that stress was recurring in 60% of the participants.

This study sheds light on the use of maladaptive coping strategiessuch as substance use, binge eating, and excessive screen time (doom scrolling), which are linked to heightened risks of chronic stress, long-term burnout, and diminished psychological resilience in the medical interns.

CONCLUSION

The findings of this study highlight a significant gap in medical education, where the focus on clinical competencies often overshadows the development of essential skills for navigating the complexities of the healthcare workplace. While medical education equips graduates with the clinical knowledge and skills necessary for diagnosis and treatment, it often falls short in preparing them for the complex realities of the healthcare work environment, including workplace dynamics, administrative challenges, and self-advocacy. This study underscores the critical need for medical training programs to incorporate strategies for managing occupational stress and fostering resilience, thereby supporting the well-being and professional development of medical interns.

Recommendations

It is imperative that an in-depth understanding of stress and its associated factors facilitates the adoption of effective coping strategies, which may consequently lead to a significant reduction in stress prevalence among medical interns.

1. Education on risk factors:

- Integration of stress management into medical curriculum- Workshops can be incorporated within the curricula focusing on the psychological impact of clinical training, risk factors for stress, and signs of burnout. Such integration ensures that interns are systematically exposed to the theoretical and practical aspects of stress management.
- Encouragement of help-seeking behaviour- Ensuring that the interns are aware of and have access to counselling and psychological services, including mental health discussions in formal and informal academic settings.
- Resilience building- Along with this, focus can be put on resilience building of the interns when it comes to dealing with different scenarios (e.g., excessive workload, poor supervisor support, how to break bad news, lack of sleep etc.) during their tenure.
- Establishment of mentorship and peer support- Where experienced clinicians or senior residents guide the interns with respect to work expectations, to strike a balance between the personal and professional life.

2. Collaborative Care: Effective management of stress among medical interns requires a collaborative care approach involving a psychologist, psychiatrist, family, and peer support systems. They can foster a supportive learning environment through mentorship and stress management training and provide essential services. Institutional support is crucial for implementing policies that promote work-life balance and reduce the risk of burnout, and help in eliminating the stigma.

Limitations

It should be mentioned that while the study provides valuable information about the stress levels and coping mechanisms of medical interns at educational institutes in Chhatrapati Sambhajinagar, there may be limitations to the study's generalizability to other regions, institutes, or populations (such as interns in different states, working under different specialties, or healthcare systems) may be limited. Factors such as cultural variations, institutional workload, academic pressure, and available support systems can vary widely and influence both the stress prevalence and the coping strategies. To enhance external validity, future studies could replicate this research in diverse settings or include a more heterogeneous sample across multiple institutions. Nonetheless, the findings serve as a critical baseline for understanding stress patterns among medical interns in Chhatrapati Sambhajinagar.

Secondly, an online questionnaire was used to gather the data, which could have influenced response biases like social desirability bias and recall bias. Because of perceived expectations, the participants might have overreported the positive coping strategies or even underreported the maladaptive coping behaviours.

Lastly, the use of convenience sampling may restrict the results' representativeness and raise concerns about selection bias. Interns experiencing higher levels of stress may have been either more motivated to participate or more likely to avoid participation altogether, potentially affecting the internal validity of the study.

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