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EMOTIONAL EXHAUSTION AND STRESSFUL LIFE OF A MEDICAL POSTGRADUATE RESIDENT: CAN INTRINSIC MOTIVATION BE THE WAY OUT?

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ABSTRACT

Objective: To assess the relationship between intrinsic motivation and emotional exhaustion among postgraduate medical residents at Memon Medical Institute Hospital, Karachi. Methods: A correlational study was conducted with 52 postgraduate medical residents from multiple clinical departments at Memon Medical Institute Hospital, Karachi. Participants completed validated survey instruments: the intrinsic motivation subscale of the Multidimensional Work Motivation Scale and the emotional exhaustion subscale of the Oldenburg Burnout Inventory. Demographic information was collected on age, gender, marital status, years of education, and length of institutional experience. Descriptive statistics summarized participant characteristics. Pearson correlation was used to test the association between intrinsic motivation and emotional exhaustion scores, and analyses were performed with Statistical Package for the Social Sciences version 24. On the emotional exhaustion subscale used, higher scores indicate less exhaustion. Results: Among 52 participants, 43 (82.7%) were female and 9 (17.3%) were male, with the majority (92.3%) aged 20–29 years. Most residents (42.3%) had less than one year of experience at the institution. The mean intrinsic motivation score was 13.37 ± 4.01, indicating a moderate to high level of intrinsic motivation, and the mean emotional exhaustion score was 7.08 ± 2.58, where lower scores indicate higher emotional exhaustion. A statistically significant positive correlation was observed, meaning higher intrinsic motivation correlated with lower emotional exhaustion ($r = 0.414$, $p = 0.002$). Conclusion: Higher intrinsic motivation was associated with lower emotional exhaustion among postgraduate medical residents at a single tertiary care hospital. This finding suggests that the residency program may be able to enhance intrinsic motivation, which in turn might improve the residents' emotional health. The program could pursue autonomy, purpose, constructive feedback, recognition of mastery, and alignment with the residents' interests and goals to pursue this. Future longitudinal and interventional studies should test causal pathways, evaluate sustainability, and explore generalizability across settings and specialties.

Keywords: *Postgraduate Medical Residents, Intrinsic Motivation, Emotional Exhaustion*

INTRODUCTION

Health care professionals, especially postgraduate residents in the clinical sciences, are among the most heavily burdened workers across all fields, balancing lengthy duty hours, high patient volumes, political interventions, and constant decision making in emotionally charged settings[1,2]. For these residents to deliver safe care and to learn effectively, they must work in environments that strengthen rather than hurt their capabilities. The workplace environment, a combination of workload, supervision, teamwork, psychosocial safety, and opportunities for learning is therefore one of the strongest determinants of both performance and wellbeing[3]. When the demands of work chronically exceed available resources, the result is often mental and emotional exhaustion. The concept of burnout was first described by Freudenberger in the context of psychiatric staff[4] and later refined by Maslach and colleagues into three core dimensions: emotional exhaustion, depersonalization, and reduced sense of personal accomplishment[5].

Though the work place environment is widely recognized extrinsic factors impacting social wellbeing of the resident doctors[6], we should pay equal attention to intrinsic motivation when it comes to understanding the experience of stress and exhaustion that residents undergo. Intrinsic motivation is defined as the doing of an activity for its inherent satisfaction rather than for some separable consequence. When intrinsically motivated, a person is moved to act for the fun or challenge entailed rather than because of external products, pressures, or rewards[7], in simplest words intrinsic motivation is working at something because it is meaningful; it is working at something that feels purposeful or interesting in itself. When intrinsic motivation is supported, individuals usually report feeling more autonomous, they express greater mastery, they feel closer to work colleagues and patients. Such experiences may enhance energy levels and, in some cases, help buffer the effects of demanding and unpredictable clinical duties. When intrinsic motivation is thwarted through micro mismanagement, insufficient feedback, or a just plain mismatch between work tasks and training goals, even simple clinical work can feel like a burden and can lead to medical errors. For this reason, many organizations now view the deliberate cultivation of intrinsic motivation as a strategic objective for performance and wellbeing[8], using approaches such as autonomy- supportive supervision, timely and constructive feedback, meaningful recognition, fair rostering, and opportunities to contribute to patient- centered initiatives.

This study addresses that important and practical question within the realities of medical training: how intrinsic motivation relates to emotional exhaustion among postgraduate residents. By examining this relationship, the research seeks to guide actionable steps for program leaders and hospital administrators, steps that complement structural reforms with human- centered practices to create environments in which residents can learn deeply, care well, and sustain their own health over time

METHODS

The study population included postgraduate residents working at MMIH, Karachi, who had completed a minimum of 3 months residency in their discipline. Convenient sampling was used; participants were invited and those who consented were included in the study.

A sample of 33 was calculated through G power 3.1.9.7 sample calculator using the method of dependent Pearson correlation. After depicted value of Pearson correlation (r) between intrinsic motivation and emotional exhaustion is -0.087[9]. Keeping 95% power and 5% margin of error.

Total 52 participants consented which were higher than the sample size calculated but to enhance the reliability and generalizability of the study we included all 52 participants.

The research design used was a correlational design. Variables were neither treated nor controlled but were described by the researcher as they occurred.

After obtaining ethical approval from the Institute's Ethical Review Board, data collection procedure was started formally. Variables of interest were "intrinsic motivation" and "emotional exhaustion". A validated questionnaire was used. Part A of questionnaire included demographic details of the participants and Part B included validated three-item intrinsic motivation subscale of the Multidimensional Work Motivation Scale[10], where

higher the score, higher was the intrinsic motivation and four negatively formulated items of validated emotional exhaustion sub-scale from the Oldenburg Burnout Inventory[11], where lower the score, higher was the emotional exhaustion. Questionnaire includes a brief cover letter informing participants about the purpose of the study. A formal consent was taken and signed from the participants. The participants were informed that they have a right to discontinue at any level of the research. They were informed that data would remain confidential, and the results will not have any influence on their academia. The soft data was kept in password protected computer access to which was only with the primary researcher. All hard copies e.g., questionnaire was kept in lock and key by the principal investigator.

Descriptive statistics were used to summarize the demographic characteristics of the participants, including age, gender, marital status, job status, years of education, and duration of institutional experience. These statistics were presented in frequencies and percentages Table 1. For continuous variables like intrinsic motivation and emotional exhaustion, mean and standard deviation were calculated Table 2.

To evaluate the relationship between intrinsic motivation and emotional exhaustion, Pearson correlation analysis was conducted. This statistical method was chosen due to the continuous nature of both variables and the study's objective of examining linear relationships. A significance level of $p < 0.05$ was set for statistical testing. All analyses were performed using SPSS version 24.

Results: Among 52 participants, 43 (82.7%) were female and 9 (17.3%) were male, with the majority (92.3%) aged 20–29 years. Most residents (42.3%) had less than one year of experience at the institution. Other details of study participants are shown in **Table 1**.

The mean intrinsic motivation score was 13.37 ± 4.01, indicating a moderate to high level of intrinsic motivation, and the mean emotional exhaustion score was 7.08 ± 2.58, where lower scores indicate higher emotional exhaustion. A statistically significant positive correlation was observed, meaning higher intrinsic motivation correlated with lower emotional exhaustion ($r = 0.414$, $p = 0.002$) **Table 2.**

TABLE 1: DESCRIPTIVE STATISTICS OF STUDY PARTICIPANTS

Descriptive Statistics	n (%)
Gender	
Male	9 (17.3)
Female	43 (82.7)
Age groups	
20-29	48 (92.3)
30-39	4 (7.7)
Present Job Status	
Full Time	51 (98.1)
Part time	1 (1.9)
Length of working time in the institution	
< 1 year	22 (42.3)
1-2 year	14 (26.9)
3-5 year	15 (28.8)
6-10 year	1 (1.9)
Marital Status	
Single	21 (40.4)
Married	31 (59.6)
Year of Education	
16 years	3 (5.8)

17 years	20 (38.5)
18 years	9 (17.3)
19 years	10 (19.2)
20 years	5 (9.6)
24 years	2 (3.8)

TABLE 2: CORRELATION BETWEEN INTRINSIC MOTIVATION AND EMOTIONAL EXHAUSTION

Study Variables	Mean Score	r	p-value
Intrinsic Motivation	13.37±4.01	0.414	0.002
Emotional Exhaustion	7.08±2.58		

DISCUSSION

Postgraduate medical residents stand at the center of clinical services in most tertiary care hospitals across the world[12]. By the end of training they are expected to demonstrate sound clinical judgment, remain active and curious learners, contribute to research, and manage wards and clinics with efficiency[13,14]. Meeting all these expectations is a very difficult task even under the best circumstances in the best training institutes[15], and mental burden of these expectations drains not only energy of the residents but creates a dreadful burnout. When the balance between work and life tilts too far toward relentless duty, the cost is often emotional exhaustion. This state has drawn worldwide attention because it not only negatively impacts the wellbeing of doctors, it also affects the quality and safety of patient care. Studies have shown that residents who report high levels of emotional exhaustion are more likely to commit medical errors, a finding that underscores the patient safety implications of trainee wellbeing[16].

Although international literature on the effects of intrinsic motivation on emotional exhaustion and burnout among medical residents is extensive, research on this topic from Pakistan remains relatively scarce. Most existing studies are from Western countries, where healthcare systems, training environments, and sociocultural factors differ significantly from those in South Asia. As such, there is a pressing need to understand how intrinsic motivation influences emotional well-being among postgraduate residents within the Pakistani context. To address this gap, we investigated the potential link between intrinsic motivation and emotional exhaustion among postgraduate trainees in a large teaching hospital in Pakistan.

The findings of this research revealed a statistically significant negative correlation between intrinsic motivation and emotional exhaustion. In simpler terms, residents who exhibited higher levels of intrinsic motivation, defined as performing tasks out of genuine interest, personal satisfaction, or alignment with personal values, were less likely to report feelings of emotional fatigue or burnout. This supports the well-established theory that when individuals perceive their work as meaningful, purposeful, and engaging, it can act as a psychological buffer against stress and exhaustion.

Comparable patterns have been reported all over the world. A study in China found that learners with higher intrinsic motivation were less likely to experience emotional exhaustion and burnout, supporting the protective role of meaning and interest in one's work[17]. Work from Indonesia similarly suggested that strengthening intrinsic motivation can be an effective lever for improving performance by buffering the impact of stressors[18]. Our findings may differ from a subset of studies that did not observe this relationship, perhaps due to differences in measurement, context, or sample characteristics[19], but they are broadly consistent with the larger body of research pointing to the benefits of intrinsic motivation[20,21].

The findings from this study have important implications for medical education systems. To strengthen intrinsic motivation from the early stages of medical training, institutions should implement orientation programs that focus not only on academic preparation but also on stress management and resilience-building. Peer

mentorship programs could also be beneficial for first-year postgraduate residents with guidance from more experienced students, helping them navigate the initial challenges of medical training. According to the model of Dunn et al[22], even though resilience and intrinsic motivation are individual characteristics, it can be encouraged through different techniques. On a broader institutional level, it is essential to advocate for policies that create a supportive framework for medical education, including national guidelines for mental health support, for the benefit of not only doctors but ultimately leading to better healthcare.

At the program and institutional level, leaders can create conditions that make motivation easier to sustain: autonomy- supportive supervision, fair and predictable schedules, protected learning time, timely and constructive feedback, and meaningful recognition of growth. Access to confidential mental health services, clear pathways for help- seeking, and routine monitoring of wellbeing using validated tools signal that the institution values both performance and people. Finally, national guidelines that embed mental health support and workload standards into accreditation can lift the baseline for all training sites. Such measures benefit not only healthcare providers but also contribute to safer and more consistent patient care.

STRENGTHS AND LIMITATIONS

This research offers valuable insights and holds considerable strength, primarily because it sheds light on the pressing and globally recognized issue of emotional exhaustion and burnout among postgraduate medical residents. While burnout among healthcare professionals has been widely studied in the West, its prevalence and associated factors remain underexplored in the South Asian context, particularly in countries like Pakistan. This study contributes significantly to filling this regional research gap by focusing on an important but often overlooked population segment—postgraduate medical residents who form the backbone of patient care in tertiary hospitals.

One of the key strengths of this study is its methodological rigor. It employed well-validated and widely accepted psychometric tools to measure emotional exhaustion and intrinsic motivation. These tools ensure the reliability and validity of the findings and make them comparable to international data. Moreover, by specifically exploring the relationship between intrinsic motivation and emotional exhaustion, the study adds depth to the current understanding of protective psychological factors that can mitigate burnout. This focus on intrinsic motivation is particularly relevant, as it is an internal resource that institutions can nurture through supportive educational environments and recognition strategies.

However, the study does have certain limitations that must be acknowledged. First and foremost, the research was conducted at a single tertiary care hospital, and the sample was limited to postgraduate trainees from that institution. This restricts the generalizability of the results to other hospitals and medical institutions, which may have different training environments, stressors, and support systems. A multicenter study would enhance the external validity of the findings.

Secondly, the study did not explore the influence of various demographic variables such as age, gender, marital status, and socioeconomic background, all of which can potentially impact the level of emotional exhaustion or motivation. Including such data in future research could provide a more nuanced understanding of individual risk and protective factors.

Thirdly, the study did not stratify the data according to the year of residency training. It is possible that first-year residents, due to the transition into clinical responsibilities, may experience higher stress levels compared to their senior counterparts. Identifying which group is more vulnerable could help tailor interventions more effectively.

CONCLUSIONS

The findings of this study suggest that intrinsic motivation is significantly and inversely associated with emotional exhaustion among postgraduate medical residents. Encouraging and fostering intrinsic motivation through structured institutional support, meaningful recognition, and a positive learning environment may serve as a crucial strategy in mitigating burnout. Ultimately, enhancing intrinsic motivation not only improves

trainee well-being but also ensures better clinical performance and safer patient care outcomes.

CONFLICT OF INTEREST

None

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DISCLOSURE

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