

## Original Research

# A Cross-Sectional Study To Find Out The Correlation Of Emotional Intelligence With Perceived Stress And Sleep Quality Among Female Resident Doctors In Bangalore

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### ABSTRACT:

**BACKGROUND:** Emotional Intelligence (EI) is the ability to perceive, assess, and manage emotions of one's self, and others. Stress in today's world is inevitable. Studies have shown that professionals are into more job stress especially female resident doctors due to continuous duties and lack of proper sleep resulting in physiological disturbances, emotional unhappiness and strained relationship with others. A good emotional intelligence is essential for productive work efficiency and to maintain healthy doctor – patient relationship. The current study is done to correlate emotional intelligence with perceived stress and sleep quality among female resident doctors.

**AIM:** To correlate emotional intelligence with perceived stress and sleep quality among residents assigned with 24 hours continuous duty twice a week.

**MATERIALS & METHODS:** A cross-sectional Study was done on 60 unmarried Final Year female resident doctors in age group of 26-30 years from Victoria hospital, BMCRI from August-September 2019. After Ethical clearance and consent, Emotional intelligence, Stress and Sleep quality was assessed using Schutte self-report emotional intelligence test (SSEIT), Perceived stress scale (PSS) and The Pittsburgh sleep Quality (PQLI) respectively. Pearson's Correlation was used to correlate emotional intelligence with perceived stress and sleep quality for statistical analysis and the p value was <0.01 and r value was -0.3 to -1.0.

**RESULTS:** On Correlation of emotional intelligence with Perceived Stress Scale (PSS) the r value of -0.4 was interpreted as moderately significant and the p value of 0.003 was interpreted as strongly Significant. Emotional intelligence was negatively correlated with perceived stress ( $r=-0.4, p=0.003$ ) and sleep score – PSQI ( $r=-0.3, p=0.003$ ). On Correlation of Emotional Intelligence with Sleep Quality the r value of 0.3 was interpreted as moderately significant, the p value of 0.003 was interpreted as strongly significant.

**CONCLUSION:** With decreased emotional intelligence there is increase in perceived stress and poor sleep quality.

**Keywords:** Doctor-patient relationships, continuous duties, sleep disturbances

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### INTRODUCTION:

Residency training period is stressful and overwhelming as the residents work for long hours along with heavy academic pressure as they are the primary care givers in a tertiary hospital. Residents carry tremendous responsibilities in their workplace yet with little autonomy besides high degree of personal, interpersonal, and work-home interference. This results in lot of pressure and stress which mostly stems from the fact that the doctors,

while taking care of other people's lives, might make mistakes or commit errors which could be costly and sometimes irreversible. The medical doctor is therefore expected to be in a perfect state of mind. A recent review concluded that lack of work-life balance, female sex, lack of job satisfaction, long hours at work, and younger age are important predictors of burnout in doctors.<sup>1</sup> Female resident doctors have been reported to have very high levels of stress and have been found to be more likely to report

stress when compared to men (28% vs. 20%). Some predictors of stress in female physicians include demands of the job, to fulfil the expectations of patients, on call duties and pressure from the senior authorities<sup>2</sup>. In addition to this, too short and poor quality sleep of physicians as a result of continuous night duties substantially increases the risk of medical errors and therefore is hazardous for both the physicians' and patients' safety<sup>3</sup>. All these factors set the stage for residents to develop perceived stress and thereby leading to progressive accelerating burnout<sup>1</sup>. Emotions are fundamental to health care and crucial in providing empathetic and patient-focused care<sup>4</sup>. The self-efficiency of a person to perceive, understand, and manage emotions in oneself and others, while adapting and coping with surroundings to successfully deal with internal and external environmental demands is called as emotional intelligence (EI)<sup>1</sup>. Goleman's four key domains of Emotional Intelligence are self-awareness, self-management, social awareness, and relationship management. A systematic review indicates that individuals with high emotional intelligence (EI) tend to exhibit academic success, empathy, enhanced patient care, optimism, social skills, and efficient problem-solving abilities. Currently, increasing stress among resident doctors in tertiary care settings is resulting in stress-related health issues and dissatisfaction among caregivers regarding their roles, consequently affecting patient satisfaction negatively. Henceforth this study was undertaken to correlate the Emotional Intelligence with the perceived stress and sleep quality among Female Resident Doctors in Bangalore.

## MATERIALS AND METHODS:

**STUDY DESIGN:** Cross-sectional study

**STUDY PLACE:** Bangalore

**STUDY POPULATION:** 60 Unmarried Female Resident Doctors in the age group of 26-30 years

**STUDY PERIOD :** August– September 2019

**ETHICAL CLEARANCE AND INFORMED CONSENT:**  
Taken

### INCLUSION CRITERIA:

1. Final year Female Resident Doctors
2. 26-30 years
3. Night duties for 24 hrs twice a week
4. Unmarried

### EXCLUSION CRITERIA:

1. Married women.
2. Those who are in pre-menstrual/menstrual phase
3. Known neurological and emotional disturbances
4. H/O troubled childhood and broken family

Following ethical clearance from the Institutional Ethics Committee, study participants were provided with comprehensive verbal and written explanations of the study objectives, after which they provided informed consent. Subsequently, resident doctors, the study participants, were contacted at their convenience, either at their hostel or home, for data collection, with prior notification via telephone. The study participants completed a self-administered questionnaire, providing information on their background characteristics including name, age, permanent residence, marital status, discipline, year of posting, as well as details about their working hours, night duties, and emergency duties from the preceding month. The study was started after the subjects fulfilled the inclusion criteria and were enrolled after obtaining consent. Emotional intelligence, Perceived Stress and Sleep quality was assessed using Schutte self-report emotional intelligence test (SSEIT), Perceived stress scale (PSS) and The Pittsburgh sleep Quality (PQLI) respectively.

**Emotional intelligence** was assessed using **Schutte self-report emotional intelligence test (SSEIT)**<sup>5</sup> which is a questionnaire comprising of 20 questions which is to be answered from the numbers 0-5 and each number represents as follows:

**0** = Not Applicable

**1** = Rarely

**2** = Occasionally

**3** = Frequently

**4** = Often

**5** = Always

According to the popular model of Emotional Intelligence by Goleman, proposes a 2-by-2 table with cells describing self-awareness, self-regulation, social awareness, and relationship management. These cells are populated by 18 component competencies that define EI. The model says that EI, rather than being an inborn trait, is a set of competencies that can be explicitly developed to enhance performance.<sup>10</sup>

**Self-awareness** is the most fundamental principle behind EI can be increased through mindfulness. The art of practicing mindfulness is facilitated by practising meditation. People learn to pay attention to thoughts, sensations, perceptions, and emotions as temporary physiologic experiences that can be observed calmly without becoming "caught up" and controlled by them.

**Self-management** involves the application of emotional self-control, trustworthiness, conscientiousness, adaptability, achievement orientation, and initiative. These skills, in turn, may be developed through the various mindfulness interventions mentioned previously

**Social awareness** includes the subdomains of service orientation and empathy. Studies have found that a simple exercise consisting of writing about a personal health struggle or a close family member's health struggle increased the empathy in students

**Perceived Stress** was assessed using **Perceived Stress Scale<sup>6</sup>**, a questionnaire comprising of 10 questions related to the person’s thoughts and emotions over the past month. The answers were graded from 0 to 4 and each number represents as follows:

- 0 = Never
- 1 = Almost Never
- 2 = Sometimes
- 3 = Fairly Often
- 4 = Very Often

**Sleep Quality** was assessed using **The Pittsburgh sleep Quality (PQLI)<sup>7</sup>**, a questionnaire comprising of sleep habits pertaining to the past one month only.

The answers were graded from 0 to 3 and each number represents as follows:

- 0 = Very Good
- 1 = Fairly Good
- 2 = Fairly Bad
- 3 = Very Bad

**STATISTICAL ANALYSIS:**

Correlation of Emotional Intelligence and Sleep Quality was done using Pearson’s Correlation Coefficient and the interpretation was considered significant when the p value was <0.01 and r value was -0.3 to -1.0 using the SPSS 22 version software.

**RESULTS:**

**Table1: Correlation of emotional intelligence with Perceived stress scale (PSS)**

	r value	p value
EMOTIONAL INTELLIGENCE	-0.4*	0.003*

\*r value [-0.3 to -1.0] is significant

\*p value <0.05 is significant

**Table :1** shows the results of correlation of emotional intelligence with Perceived Stress Scale (PSS) and the r value of -0.4 was interpreted as moderately significant, the p value of 0.003 was interpreted as strongly Significant.

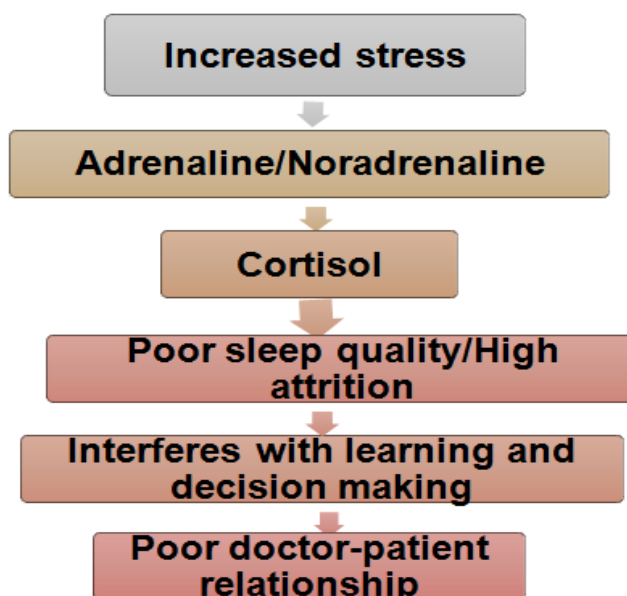
**Table 2: Correlation of emotional intelligence with Sleep Quality**

	r value	p value
EMOTIONAL INTELLIGENCE	-0.3*	0.003*

r value [-0.3 to -1.0] is significant

\*p value <0.05 is significant

**Table:2** shows the results of Correlation of Emotional Intelligence with Sleep Quality and the r value of 0.3 was interpreted as moderately significant, the p value of 0.003 was interpreted as strongly significant.



**DISCUSSION:**

The results from our study showed a moderately negative correlation of Emotional Intelligence and perceived Stress as well as Sleep Quality. With Decreased Emotional Intelligence there is increase in the perceived Stress, Poor sleep quality and vice versa. Hospitals present a complex and challenging

environment to resident doctors. Resident doctors, serving as the cornerstone of the system, shoulder the brunt of the workload. Their dedication is evident in their long hours and countless sleepless nights, often extending their duties into the next day or even beyond. Furthermore, they are tasked with making critical decisions amidst uncertainty, all while

maintaining compassion in the face of distress and mortality. The high prevalence of burnout among female doctors during residency underscores the significant impact of work-related stress, often leading them to opt for less demanding specialties to achieve a better work-life balance. A study by *Prins et al* have found more self-reported errors in patient care by resident doctors having significantly high level of perceived stress.<sup>8</sup>

In a study done by *Jung et al*, Low emotional intelligence (EI) was linked to elevated stress levels, while high levels of emotional awareness, expression, and regulation were correlated with reduced stress levels. Additionally, diminished emotional regulation was associated with heightened anger levels. Moreover, research has highlighted the significance of both IQ and EI in cognitive control processes. Participants reporting higher EI demonstrated enhanced cognitive task performance and efficiency compared to those with lower EI levels.<sup>9</sup>

According to study done by *Kilgore et al*, sleep deprivation induces transient alterations in brain metabolism, cognition, emotions, and ethics, resulting in mild dysfunction of the prefrontal cortex and subsequent difficulties in motivation, adaptability, planning, and organization. After 24 hours of uninterrupted wakefulness, the prefrontal cortex exhibits heightened susceptibility to the impacts of sleep deprivation, marked by a notable decline in metabolic activity.

Dysfunction within the ventromedial prefrontal cortex is associated with impaired EI, which is necessary to cope with the changing demands. Sleep deprivation not only affects pure cognitive abilities but also affects the functions that are central to personality, social interaction and capacities which play a central role in EI.<sup>10</sup> With continuous night duty hours over a long period of time can significantly reduce the Emotional intelligence which is necessary for clear decision making and to have a healthy doctor-patient relationship.

A study done by *Borges et al* studied the relationship management aspect of EI by examining the team interactions involving medical students and found that there was a significant relationship between EI and quality of team interactions. Mentors who demonstrate compassion, a mental state endowed with sense of concern for suffering of others, and aspiration to see that suffering is relieved, are much more likely to gain the trust and respect of their students.<sup>11</sup>

The workload endured by resident doctors contributes to burnout and can potentially be mitigated through measures such as restricting working hours, optimizing work schedules, and incorporating breaks between duties. Nonetheless, implementing these interventions may pose challenges in regions with limited manpower, such as developing countries like India. A study explored the feasibility of improving trait emotional intelligence (EI) through brief EI

training, revealing a notable enhancement in emotion identification and management skills<sup>12</sup>

Wider implementation of EI training will help foster the development of more attending physicians who strive to be good role models, so that students can be inspired to become compassionate, well-adjusted physicians.<sup>13</sup>

#### LIMITATIONS:

1. Small sample size.
2. Measurement of Cortisol levels would provide more details about the stress levels and sleep-wake cycle.
3. Measurement of Pro inflammatory cytokines like IL-6 as stress predictors.

#### CONCLUSION:

The stress and emotional strain inherent in medical training and practice surpass that of many other professions. The relentless pressure experienced by residents often disrupts their work-life equilibrium and diminishes their Emotional Intelligence, resulting in subpar performance and compromised patient outcomes. This complex issue necessitates a collaborative effort from hospital administrators, policymakers, and the media to identify and implement effective solutions. Cultivating mutual trust between doctors and patients emerges as a pivotal strategy in alleviating resident work stress. Initiatives such as Continuing Medical Education (CME) retreats, centered on Emotional Intelligence, offer opportunities for physicians to explore mindfulness, self-awareness, and biofeedback. Additionally, integrating basic Emotional Intelligence courses into residency programs can equip residents with the skills to navigate the demands of their profession while fostering compassionate doctor-patient relationships.

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**SOURCE OF FUNDING:** Self

**ETHICAL CLEARANCE:** Taken.

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