Correlation and Interaction between Emotional Intelligence and Temperament Factors in Medical Resident Doctors in a Tertiary Care Teaching Hospital in Central India - A Cross Sectional Survey

Avinash Vikram Turankar[1], Shankar Bhusari[2], Manish Thakre[3], Ashwita Uday Shetty[4], Pramoda N.[5], Sudhir Mahajan[6]

[1, 4, 5] Department of Pharmacology, Government Medical College, Nagpur, Maharashtra, India. [2]Behaviour Testing and Counselling Academy, Nagpur and Academic Counsellor for Psychology, IGNOU Centre, Nagpur, Maharashtra, India. [3, 6] Department of Psychiatry, Government Medical College, Nagpur, Maharashtra, India.

ABSTRACT

BACKGROUND

Emotional intelligence and temperament are important parts of medical practice in good clinical history taking, diagnosis, effective treatment, and in managing the extreme situations in the workplace. This is more important in young resident doctors who lack the experience in handling patients. The primary objective of this study is to evaluate the four different aspects of emotional intelligence and their correlation with different temperamental factors in medical resident doctors.

METHODS

This is a cross sectional study. Students pursuing higher medical education were assessed for temperament and emotional intelligence. Purposefully selected participants were given temperament scale and emotional intelligence scale for their assessment. The four components of emotional intelligence were correlated with the 15 temperamental factors.

RESULTS

In this study medical residents were found to be low / very low on temperamental scale on all 15 parameters and are average on emotional intelligence score on all four parameters. There is a positive correlation between all temperamental factors and emotional intelligence factors except secretiveness and aggressiveness, which show negative correlation. When various subfactors of temperament were correlated with grand emotional intelligence, sociability, vigorous, cooperative, persistence and tolerance showed moderate strength of correlation ranging from 0.36 to 0.5. In comparison between male and female residents, factors like acceptability, responsibility and persistence were predominant in males while sociability, ascendant, placid, vigorous and tolerance were predominant in female resident doctors.

CONCLUSIONS

In this study medical residents were found to be are low / very low on temperamental scale and average on emotional intelligence. There is moderate correlation between grand emotional intelligence and grand temperamental score. There is no gender factor influence when head-to-head comparison was done but individual gender wise correlation analysis has shown that emotional intelligence correlates differently to temperamental factors in both genders.

KEYWORDS

Emotional Intelligence, Temperament, Correlation, Medical Residents, Gender Correlation

Corresponding Author:
Dr. Avinash Vikram Turankar,
Associate Professor,
Department of Pharmacology,
Government Medical College,
Nagpur - 440003, Maharashtra, India.
E-mail: aturankar@hotmail.com

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BACKGROUND

Temperament is one of the most important aspects of the personality which comprises of various individual traits. It has been defined by various authors. There are various dimensions that have been described as a component of temperament like sociability, ascendance, reflectivity, impulsivity, thoughtfulness, cooperative nature, aggressiveness, tolerance, and tough mindedness.

There are many studies which show how temperament helps medical residents to choose their specialty course like, students with an 'investigative' personality profile choose internal medicine or pathology, students with 'commanding' personality choose surgery, students with 'dependable' personality choose paediatrics etc., but there are hardly any studies showing how this temperament in these residents helps them deal with patients and handle the conflicts that occur during the selection of course of their residency.

Of late there have been various incidences of doctor patient conflicts in society. Both the parties have their viewpoints mentioning weakness of the other; this being the reason of the conflict. Whatever may be the cause of the patient doctor conflict, a doctor is at the receiving end and has a more responsible role. If there is a fault or weakness in the temperament of the doctor then that weakness can be identified and taken care through behavioural modification, so that patient conflict may be reduced and in general it would be good for the doctor patient relationship.[1]

Emotional intelligence [EI] is defined as the ability of a person to understand and respond to one's own and others' emotions and use this ability to guide one's thoughts and actions.[2] Emotional intelligence plays an important role in all human interactions.

Emotional competencies are not inborn talents but are learned capabilities that must be worked on and which can be developed through life experiences. Learning requires thinking. EI impacts many different aspects of our daily life. It is increasingly referred to in modern medicine and other healthcare disciplines. Emotionally skilled physicians can interact with patients and other healthcare team members effectively to build the bond and trust necessary to establish a solid patient-provider and work relationship.[3]

Human interactions play a major role in medical profession, hence emotional intelligence is of great importance.[4] The role of emotional intelligence in effective clinical practice has been gaining increasing interest in the recent times. Empathy and compassion have always been desirable virtues in a doctor.[3,5] Studies have shown that physicians who show empathy are more effective in eliciting good clinical history, arriving at an accurate diagnosis and get better compliance to the prescribed treatment.[6]

Along with its role in good clinical care, EI is also important in managing human relationships in the treatment process. Emotional intelligence is important for the physician to effectively work as a team among nurses, hospital managers and other allied health professionals.[7] Effective communication with the relatives, friends, and family of the patients is also important.[8] Gaining proficiency in the area of EI undoubtedly improves the communication skills and hence patient satisfaction and concordance. Knowledge about patient's background and emotional reactions can help to tailor the treatment to match the individual's expectations. Therefore, there is a need to impart emotional intelligence skills as part of medical education in creating sensitive and empathetic physicians for the future. Until recently, the medical curriculum was so overloaded with subject content that there was little scope for skill development. Much of these soft skills such as effective communication, emotional intelligence, empathy etc. were to be learnt by observing the senior colleagues in action at the bedside and the outpatient clinics.[2]

But now In India, the Vision 2015 document of the Medical Council of India, the apex body in charge of curriculum development for medical education in the country, focused on the attitude and communication module (ATCOM) module, which is the attitude and communication module, to impart education on communication skills, empathy, emotional intelligence, and ethics.[9]

Although emotional intelligence is being studied in greater detail and suggestions in improving the emotional intelligence has also been mentioned in these studies, there is hardly any specific guideline or suggestion for improving the competencies or skills to improve the overall emotional intelligence in doctors. On the other hand, the temperamental factors which are dependent on personality are understudied but are truly relevant in the doctor patient settings. Hence, we are considering studying the relationship between emotional intelligence and temperament score in doctors which include 15 personality factors. The present study focuses on studying the temperamental factors which might suggest the weak areas for attaining the necessary emotional intelligence skills. The emotional intelligence of individual encompasses four components intrapersonal awareness & intrapersonal management and interpersonal awareness & interpersonal management. How these four components interact with 15 temperamental factors would be accessed in the present study.

Objectives

1. To find the correlation and interaction between emotional intelligence and temperament factors in medical resident doctors.
2. To study the correlation of four different aspects of emotional intelligence and its correlation with different temperamental factors.
3. To study the influence of gender on the interaction and correlation between emotional intelligence and temperament.

METHODS

Research Design

The plan was to collect accurate sample from medical college and administer selected tools to collect required data for this study. The data was tabulated, and inferences have been drawn from tables and statistical information.

This was a cross sectional study. Students perusing higher medical education were assessed for temperament

and emotional intelligence. Purposive sampling was done, and the participants were given temperament scale and emotional intelligence scale for their assessment. The study was correlational in terms of obtaining relationship between two factors namely emotional intelligence (EI) & temperament.

The study was completed over a period from March 2019 to November 2019. Medical residents studying in a tertiary care hospital in central India were taken as subjects.

Temperament

Temperament was assessed using Dimensions of Temperament by Dr. N. K. Chadha and Miss Sunanda Chandna, Department of Psychology, Delhi University, Delhi. (National Psychological Corporation).

All factors will be tested on dimension of temperament scale by Dr. NK Chadha and Miss Sunanda Chandana. Test reliability for the whole scale was found out to be 0.94. The split half reliability of even odd items was found to be 0.76. The overall cross validation for all dimensions were found to be 0.81. The present scale is having validity coefficient of 0.73 in correlation with Thorndike total score.

Dimensions under study were sociability, ascendant, secretiveness, reflective, impulsivity (or impulsiveness, placid, accepting, responsible, vigorous, cooperative, persistence, warmth, aggressiveness, tolerance and tough minded. Participants were asked to mark answers to 152 questions as "YES" or "NO' based on their activities and feeling about the situation given in question. Instructions were red loudly to all participants and scale administration was done.

Scoring has been done as per procedure given in the manual. Score 1 for the response "Yes" to all items (119) given by the author and score 1 to "No" response to all items (33) given in the manual.

Test-retest reliability for the whole scale was found to be 0.94. The split half reliability of even odd items was found to be 0.76. The overall cross validation for all dimensions were found to be 0.81. The present scale has validity coefficient of 0.73 in correlation with Thorndike total score.

Emotional Intelligence

EII-MM has been designed for use in Hindi and English with 16 + years age of school college and university students for the measurement of their emotional intelligence total as well as separately, primarily focusing on areas of aspects of emotional intelligence described below.

1. Intra-personal awareness (knowing about one's own emotions)
2. Inter-personal awareness (knowing about others emotions)
3. Intra-personal management (managing one's own emotions)
4. Inter-personal management (managing others emotions)

Inclusion Criteria

Medical resident doctors working at a tertiary care hospital in central India who were willing to participate in the study were included in the study.

Exclusion Criteria

Subjects who were on psychoactive treatment, for example treatment for depression, anxiety or history of taking sedative hypnotic drugs for any other reason and subjects not willing to participate.

Institutional ethical committee approval was obtained. Informed consent was taken from the subjects for participation in the study.

Statistical Analysis

The data was analysed using graph pad prism version 5. (The demo version). The column statistics was done to all the parameters of temperament and emotional intelligence and most of the parameters were found to be normally distributed. The Pearson's correlation analysis was done as the data was normal. Students' unpaired T test was done to analyze the gender influence on temperamental and emotional intelligence factors.

RESULTS

The primary objective of this research is "To study the correlation of four different aspects of emotional intelligence and its correlation with different temperamental factors". To achieve this objective, researcher needs to assess temperamental factors and emotional intelligence of resident doctors. Temperamental factors have been shown in the graph.

Interpretation

In this study medical residents were found to be very low on sociability (the ability to be fond of the company of others), secretiveness (the ability of the individual to keep things secret), vigorous, aggressiveness (a range of behaviours that can result in both physical and psychological harm to one-self, others), tolerance (a fair, objective, and permissive attitude toward those whose opinions, practices, race, religion, nationality etc., differ from one's own), and tough minded (the temperamental dimension, which is practical, realistic and unsentimental attitude or point of view towards things).

They are found low on ascendant, reflective (the capability of the individual to think deeply), impulsivity (a tendency to act on a whim), placid (the ability of the individual to keep calm and be peaceful), cooperative (the ability of the individual to work in a group) persistence and warmth (the individual quality that reflects enthusiasm and kindness towards others feelings and situations). Assessment of emotional intelligence and its sub-factors (n = 50).

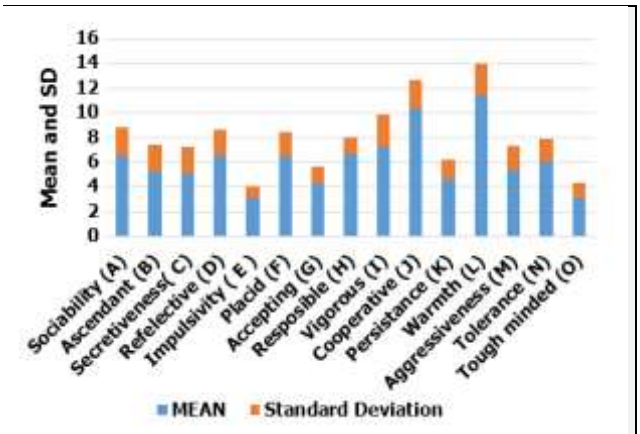

Figure 1. Scores of Various Temperamental Factors in Medical Residents

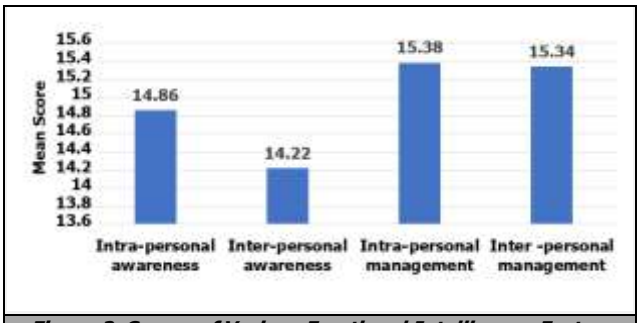

Figure 2. Scores of Various Emotional Intelligence Factors in Medical Residents

Correlation between Emotional Intelligence and Temperament

There is a positive correlation between all temperamental factors and emotional intelligence factors except secretiveness and aggressive, which showed negative correlation. This correlations trends may or may not be statistically significant. (Graph 3)

When the correlation analysis was done on the temperamental factors and emotional intelligence factors following were important findings.

- The Pearson's correlation analysis shows that the Grand Temperament Score was correlated significantly with all the emotional intelligence parameters like intrapersonal awareness, interpersonal awareness, intrapersonal management and interpersonal management and Total Emotional Intelligence Score as well. The strength of correlation is moderate in nature ranging from 0.37 to 0.62.
- When the various temperamental factors were correlated with emotional intelligence sub factors, it was found that the factors like secretiveness, impulsivity, accepting and tough mindedness had no significant correlation with emotional intelligence and its sub factors.
- When various sub factors of temperament were correlated with grand emotional intelligence. Sociability, responsible, vigorous, cooperative, warmth and tolerance showed significant correlation ranging from 0.36 to 0.5. This signifies that these 6 factors of temperament are playing important role in emotional intelligence. This could be the potential focus areas for training of the medical residents.

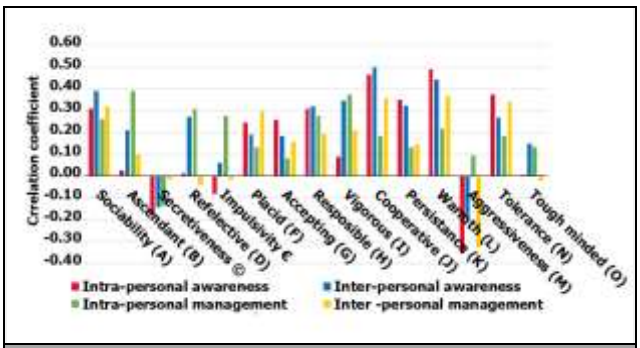

Figure 3. Pearson's Correlation of Temperamental Factors and Emotional Intelligence Components in Medical Residents

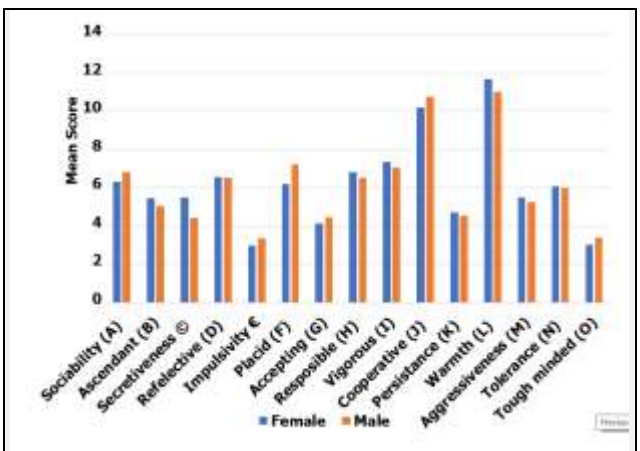

Figure 4. Gender Difference in Various Temperamental Factors

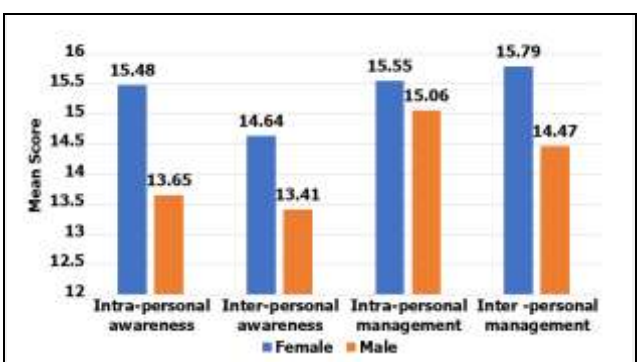

Figure 5. Gender Difference in Emotional Intelligence Components

There was no statistical difference when all the temperamental factors and emotional intelligence factors were analysed for gender influence.

Sub Factors Correlation Interpretation within Gender

When the Pearson's correlation analysis was done separately for male and female genders following were the important findings.

1. Statistically significant correlation was found in males and simultaneously no correlation was found in females in the factors like accepting, responsible and persistence. Which means that these factors were predominant in males as compared to female medical resident doctors.
2. Statistically significant correlation was found in females and simultaneously no correlation was found in males

in the factors like sociability, ascendant, placid, vigorous and tolerance. Which means that these factors were predominant in females as compared to male resident doctors.

3. There was a significant correlation in both the genders in the factors like warmth and cooperative.

There was no correlation in both genders in the factors like secretiveness, reflective, impulsivity and tough mindedness. Which means they were not clinically relevant in both the genders in medical resident doctors as far as emotional intelligence score was concerned.

DISCUSSION

Overall the present study shows that medical residents were low and very low on dimensions of temperament. The medical residents are average on emotional intelligence scale. There is a positive correlation between the Grand Temperament Score and Grand Emotional Intelligence Score. There is a positive correlation between the dimensions of temperament and emotional intelligence except secretiveness and aggressive, which show negative correlation.

Six dimensions of temperament like sociability, vigorous, cooperative, persistence and tolerance have shown statistically significant correlation with emotional intelligence score hence are important and could be potential focus areas for training of medical residents for enhancing the emotional intelligence skills. Sub factor correlation analysis has shown that many factors of temperaments and some factors of emotional intelligence are showing naturalistic and explainable correlation which is of moderate in degree. There is no gender factor influence on various temperamental and emotional intelligence factors when head to head comparison was done.

But with individual gender wise correlation analysis has shown that emotional intelligence correlates differently to temperamental factors in both genders. There is a predominance of accepting, responsible and persistent in male subjects and a significant correlation of sociability, ascendant, placid, vigorous and tolerance in female participants.

Sundararajan S., & Gopichandran V. (2018) et al. in their Chennai based Indian study medical students on emotional intelligence showed the gender difference and effect of government schooling. The study concluded that the EI level of medical students of both the genders was good in the college that was studied.[2] Students from collectivist social settings like government high schools have better emotional intelligence, which may indicate that a collectivist, community oriented medical education can serve the same purpose. In contrast our study shows that the medical residents are low on emotional intelligence score and needs to be trained specifically in the various correlated temperamental areas.

Bertram K1 (2016) in their study showed strong correlation between EI, empathy and personality in podiatric medical students. Given the suggested importance and effect of such qualities on patient care, these findings may serve as guidance for possible amendments and warranted curriculum initiatives in medical education.[10] Our study has also shown the strong correlation between various temperamental factors and emotional intelligence. These factors could be potential areas for training of residents.

Arora S1, (2010) stated new medical education curriculum requires competencies which are based on emotional intelligence.[10] Can skill training in emotional intelligence be given? This was a meta-analysis of some 400 citations. Based on their observation, the researchers concluded that measures of EI correlate with many of the competencies that modern medical curricula seek to deliver.[11] Further research is required to determine whether training can improve EI and thus augment educational and clinical outcomes. Our study findings actually focus on the areas of emotional competencies where the focus of training can be imparted to the medical graduates. However large study involving diverse set of population of medical residents could further consolidate the present findings.

Ranasinghe P1 (2017) in his Sri Lankan study on medical student revealed that the final year medical students with good EI had better academic performance. In addition, they had higher level of self-satisfaction and low self-perceived stress.[12] The study recommended that enhancing EI might help to improve academic performance among final year medical student and also help to reduce the stress levels and cultivate better coping during professional life in the future. Although this study is not parallel to our study. In our study we did not assess the academic performance of the residents. However, the recommendation based on emotional intelligence parameters are in-line with our recommendations and thought process.

Aithal AP1, (2016) mentioned important findings of the study that Sixty-five percent of medical students had high EI[2]. EI was significantly higher in females (72.27 ± 8.84) compared to males (67.47 ± 15.43) (P = 0.007).[13] There was a positive correlation between EI and academic performance (r = 0.51).[13] In contrast, our study shows that there is no significant difference between the emotional intelligence of both the genders.

Johnson DR (2015) discussed direct correlation between emotional intelligence and medical education competencies in relation to the patient doctor relationship.[14] In this review article, the author has suggested that, as emotional intelligence is an ability-based skill, it allows training in specific competencies that can be directly applied to a specialized field. When EI is conceptualized as an ability that can be taught, learned and changed, it may be used to address the specific aspects of the clinician-patient relationship that are not working well. For this reason, the authors are suggesting that teaching EI should be a priority in the field of medical education in order to better facilitate their relationship in the future.[14]

Abe K (2018) reported in his Japanese study the effect of association of emotional intelligence and various personality factors and difference in the gender. In this particular relevant study, the researcher has found that emotional intelligence is not affected by gender whereas it might be affected by personality.[15] Our study has also

revealed that gender is not affecting the emotional intelligence.

However, there were certain limitations to our study. There were factors which were not under the control of the study like earlier intelligence level, socio-economic, family background of residents and their current health status. The small sample size also might influence the outcome and interpretation of the study.

Correlation of emotional intelligence with the temperamental factors would throw light on which temperamental factors are correlated with the emotional intelligence. In the medical curriculum there can be specific focus on learning certain competencies or skills to enhance the emotional intelligence. This would definitely help in empowering and implementing the present competency-based medical curriculum.

CONCLUSIONS

Medicals residents in this study were found to be low / very low on temperamental scale on all 15 parameters and average on emotional intelligence on all four parameters. There is a moderate degree of correlation between the Grand Temperamental Score and Grand Emotional Intelligence Score with all its components like intrapersonal awareness, interpersonal awareness, intrapersonal management and interpersonal management in medical residents. The sub factor analysis has showed that temperamental factors like secretiveness, impulsivity, accepting and tough mindedness has no correlation with emotional intelligence and its factors. Whereas factors like sociability, vigorous, cooperative, persistence and tolerance showed moderate degree of correlation with emotional intelligence. Sub factor correlation analysis has shown that many factors of temperament and some factors of emotional intelligence are showing correlation which is of moderate degree. There is no gender factor influence on various temperamental and emotional intelligence factors when head to head comparison was done. But individual gender wise correlation analysis has shown that emotional intelligence correlates differently to temperamental factors in both genders. There is a predominant correlation of accepting, responsible and persistent in male subjects and a significant correlation of sociability, ascendant, placid, vigorous and tolerance in female participants.

Data sharing statement provided by the authors is available with the full text of this article at jebmh.com.
Financial or other competing interests: None.
Disclosure forms provided by the authors are available with the full text of this article at jebmh.com.

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