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[Copyright](http://www.ncbi.nlm.nih.gov/pmc/about/copyright.html) © Indian Journal of PsychiatryStudy of emotional intelligence and empathy in medical postgraduatesAbhijeet Faye, Gurvinder Kalra, Rajeev Swamy, Aniket Shukla, Alka Subramanyam, and Ravindra KamathDepartment of Psychiatry, T.N.M.C. and B.Y.L. Nair Hospital, Mumbai Central, Mumbai, Maharashtra, India**Address for correspondence:** Dr. Abhijeet Faye, Department of Psychiatry, T.N.M.C. and B.Y.L. Nair Hospital, Mumbai Central, Mumbai – 400 008, Maharashtra, India. E-mail: dr.abhifaye@yahoo.co.inThis is an open-access article distributed under the terms of the Creative Commons Attribution-Noncommercial-Share Alike 3.0 Unported, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.AbstractObjectives:The important domains of emotional intelligence (EI) are self-awareness and control of emotions, motivating oneself, and empathy. These are necessary to handle any relationship. This study aims to (i) assess emotional intelligence focusing specifically on empathy; (ii) to study the level of anger; and (iii) correlating level of anger with (a) EI and (b) empathy in medical postgraduates.Materials and Methods:Subjects were assessed randomly after obtaining informed consent, through semi-structured proforma and various scales, including Emotional Quotient Self-Assessment Checklist, Multi-Dimensional Emotional Empathy Scale, and Clinical Anger Scale. Data was analyzed using multivariate analysis with analysis of covariance test.Results:On Emotional Quotient Self-Assessment checklist, more than 70% had poor emotional intelligence. Married males in the study were more confident and empathizing. Those with some major problem at home were more aware of their own emotions and other's feelings. Residents who had voluntarily chosen their specialty postgraduation training course (eg, medicine, surgery, and others), those who had less work load, those who had time for recreational activities, and exercise had scored high on EI. Good control of emotions in self was associated with good relationship with superiors and colleagues. Score on Clinical anger was moderate to severe in 10.6% of the subjects. EI and clinical anger correlated negatively.Keywords: Anger, emotional intelligence, empathy, medical postgraduates* [Other Sections▼](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable)

INTRODUCTIONEmotional Intelligence (EI) is “*a type of social intelligence that involves the ability to monitor one's own and others’ emotions, to discriminate among them, and to use this information to guide one's thinking and actions.*”[[1](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable#ref1)] This definition was later expanded to include *the verbal and nonverbal appraisal and expression of emotions*.[[1](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable#ref1)] According to Goleman (1995), emotional intelligence consists of five components: Knowing our emotions (self-awareness), managing them, motivating ourselves, recognizing emotions in others (empathy), and handling relationships.[[2](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable#ref2)]It is only recently that the concept began to be associated with patient-centered practice. Within the therapeutic relationships, professionals must respond to both the technical aspects of disease as well as associated emotional aspects.[[3](http://www.ncbi.nlm.nih.gov/pubmed/11879479)–[5](http://www.ncbi.nlm.nih.gov/pubmed/10824767)] In the process, managing their own responses and emotions too, are of paramount importance.*Empathy* is another important aspect in the doctor–patient relationship. It is described as “*a cognitive attribute, which involves an understanding of the inner experiences and perspectives of the patient as a separate individual, combined with a capability to communicate this understanding to the patient.*[[6](http://www.ncbi.nlm.nih.gov/pubmed/12202278)] Empathy, whether independently developed, or as a part of EI, is an important skill to possess by any health care professional.The third important attribute that may affect a clinician's approach to a patient is anger, that is, *clinical anger* within the confines of the working environment.Thus an assessment of EI, empathy, and clinical anger, would probably help us determine factors to help guide healthcare professionals toward better patient-centered care, along with the ability to handle the profession-associated stress themselves.* [Other Sections▼](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable)

MATERIALS AND METHODSThe study was conducted in the psychiatry department of a tertiary care medical hospital during January 2008 and August 2009 after obtaining the approval for the study from the Institutional Review Board.SubjectsMedical postgraduates (150) from tertiary care hospital in Mumbai were invited to participate in the study after obtaining their informed consent. The subjects included did not have any diagnosed medical or psychiatric illness as per history and Diagnostic and Statistical Manual for diagnosing mental disorders (DSM IV-TR), respectively. This was a cross-sectional, single interview study. The various tools (self-administered except for semi-structured proforma) used for the study were as follows:Self-constructed semi-structured proforma It included details about sociodemographic profile, work history, marital history, and so on.Emotional Quotient Self-Assessment Checklist Devised by Sterrett,[[7](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable#ref7)] it consists of 30 statements, 5 each for the areas of1. Self-dimension, which includes Self-Awareness (accurately knowing our own feelings, preferences, goals, and values), Self-Confidence (a “can do” attitude, a belief in ourselves; overcoming self-doubt, and taking reasonable risk), Self-Control (dealing well with stress; controlling emotional moods or outbursts without overcontrol).
2. Social dimension, which includes Empathy (easily reading and understanding others; listening well and reading nonverbal cues), Motivation (taking initiative, having a positive outlook, inspiring others, and so on), Social Competence (persuading and influencing others, being likable and having positive relationships). This is a 5-point Likert rating scale, ranging from 1 to 5; total score on each of six facets ranges from 5 to 25 and a cutoff value for good EI is 20 in each domain, the score below which needs improvement in the respective domain.
3. Multi-Dimensional Emotional Empathy Scale was devised by Caruso and Mayer.[[8](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable" \l "ref8)] It has 30 statements covering the following factor scales: Suffering, Positive Sharing, Responsive Crying, Emotional Attention, Feel for Others, and Emotional Contagion. This is a 5-point Likert rating ranging from 1 to 5 with 6 reverse-scored items (scoring from 5–1); The alpha reliability for the total 30-item scale scores was 0.88 (mean=3.63, SD=0.57). General Empathy scale, consisting of 26 items of the six factor scales, has a mean of 3.53 (SD=0.60) and an alpha reliability of 0.86.[[8](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable" \l "ref8)] The mean scores of each factor scale also have good alpha reliability.
4. Clinical Anger Scale (CAS) devised by William E. Snell Jr[[9](http://www.ncbi.nlm.nih.gov/pubmed/7797645)] has 21 items. Each cluster of statements is scored on a 4-point Likert scale, with A=0, B=1, C=2, and D=3. The subjects’ responses on the CAS are summed so that higher scores correspond to greater clinical anger (range, 0–63). Yielded reliability coefficients are 0.94 (males and females together), 0.95 (males only), and 0.92 (females only).[[9](http://www.ncbi.nlm.nih.gov/pubmed/7797645)]

Data analysisEmotional intelligence, levels of empathy and anger level were assessed by EQ Self-Assessment Checklist, Multi-Dimensional Emotional Empathy Scale, and CAS, respectively. Data was pooled and statistical analysis was done with SPSS v16 software package using multivariate analysis with analysis of covariance test.* [Other Sections▼](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable)

RESULTSPopulation characteristics (as obtained from semi-structured proforma)Out of sample of 150, a majority, that is, 74.7% of the subjects belonged to the 23–27 years age group. 68.7% were males, while 31.3% were females. 70% of resident trainees were from outside Mumbai. 62.7% of subjects were from the medical specialties, whereas 37.3% were from the surgical specialties. 38.7% of the residents were married of which 60% had children.. Majority of them (82.7%) were from upper middle class (according to Modified Kuppuswami Scale).[[10](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable#ref10)]Profession-related characteristics (as obtained from semi-structured proforma)81.3 % postgraduates had chosen their specialty by choice. 36% of residents were not satisfied with the current accommodation facilities. Almost 80% of them said that they work >50 h a week and around 74% had a sleep of 30–50 h a week only. More than 60% of residents got<10 h for recreational activities and <1 h for exercise per week.Interpersonal relationships (as obtained from semi-structured proforma)61.3% said that they had attended a communication skills workshop at least once in their residency; 70% of the resident medical officers did not know what emotional intelligence is; 70%–80% of the subjects perceived good interpersonal relationships with their superiors, colleagues, subordinates, spouses, and family members; and 75.3% had some or the other major problems at home like an ill patient, interpersonal problems, property issues, and so on. More than 90% of the postgraduates agreed that their patients needed to be given more time than what they were giving presently.Emotional intelligenceMore than 70% of medical postgraduates were poor in all domains of EI (score<20 as cutoff) [Tables [​[Tables11](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/table/T1/) and [​and22](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/table/T2/)].Out of 150 subjects, nearly 30% of PG students had scores<15, implying an urgent need to improve EI.Mean scores on empathy scaleThe mean scores and standard deviation on Empathy scale were as seen in [Table 3](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/table/T3/).Clinical anger10.6% of the medical postgraduates (total 16) had clinical anger level in a range of moderate to severe on CAS.Analysis and correlatesAge Older age subjects (27–31 years) reported *significantly* better self-control (*P*=0.04) and total empathy (*P*=0.03) than the younger subjects (23–27 years). However, the latter were more appreciative of positive sharing (*P*=0.002) with others. No correlation was found between age and clinical anger.Gender Mean scores for each of the EI components were *significantly* high in males compared with females with empathy almost equal in both. Male residents were found to be more self-confident (*P*=0.02) and more appreciative of suffering in others than female residents (*P*=0.004). On empathy scale mean scores for suffering and responsive crying were higher in males compared with females in whom mean scores on positive sharing, emotional attention, feel for others, and emotional contagion were high. Anger did not seem to vary with gender.Effects of social and environmental support Lower middle class residents were found to have high scores on competency (P=0.001).Effect of family support Total empathy (*P*=0.005), ability to empathize suffering with others (*P*=0.02) and the ability to feel for others (*P*=0.02) was significantly higher in those who were in regular contact with their family as opposed to those who were not. Although the number of unmarried subjects was more, of those who were married, scores on self-confidence, empathy, motivation, and competency were found to be significantly high.Statistically significant correlation was also found between married subjects and “*Feel for others*” as well as “*Total empathy*” with *P* value 0.04 and 0.02, respectively.Professional parameters Working conditions Significant negative correlation was found between those with satisfactory accommodation and ability to feel for others, that is, they were less empathizing toward others (*P*=-0.02).Choice of career Self-awareness, empathy, and competence scores were high in those who entered in the profession by choice.Work hours Those having more work load (>50 h per week) were found to be *significantly* less self-confident and less competent (*P*=0.01).Lifestyle factors Those who slept well were found to have good self-confidence and social competence (*P*=0.02 and <0.001, respectively). Also those who spent more time in recreational activities and exercise were found to be more competent socially than those who spent less time.Basic exposure to EI and communication skills Motication score was *significantly* high in postgraduates who attended a communication skills workshop at least once in their residency (*P*=0.01), while Emotional Contagion was more in those who knew what Emotional Intelligence meant (*P*=0.01).Relationship with others in work environment Subject having good self-control had good relations with their superiors and colleagues. Self-control score was also found *significantly* high in those who thought that their patients needed to be given more time for talking than what they presently give (*P*=0.007).Those having some or the other major problems at home (ill patient, property issue, interpersonal problems, and so on) scored *significantly high* in self-awareness and suffering. No relation was found between emotional intelligence and the faculty of residents.Interrelated components on EI Positive correlation was found among different domains of emotional intelligence, that is, those having a high score in self-awareness also scored high in self control, empathy, motivation, competency, and self-confidence.Relationship of various EI components and empathy components Statistically significant correlation was found in the following parameters: those who scored high in Self-Awareness and Empathy also scored better in appreciation of Suffering in others and Positive Sharing. Subjects having good self-control had negative correlation with *responsive crying*. Competent postgraduate students positively correlated with all factors of empathy except expression of *feel for others*.Anger level with EI and empathy Residents having a high level of clinical anger were found to have *significantly* low scores on self-control and empathy. Those having high level of clinical anger were also found to be less appreciative of suffering and had less positive sharing.* [Other Sections▼](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable)

DISCUSSIONWe found EI to be low in most postgraduate students, that is, >70% had a score of <20% and around 30% had <15. Such a low EI, may pose as an impediment in patient care and health service management. Unfortunately, current medical training focuses more on hard skills training. Soft skills hands on training is sorely lacking, and a resident medical doctor is expected to self-imbibe the required skills. We think this current system probably reflects the above finding.On assessment of EI, males were higher in self-confidence, whereas females were significantly higher on total Empathy scores (*P*=0.04). Sterrett[[7](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable" \l "ref7)] reported similar findings, although Austin *et al*.[[11](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable#ref11)] and Singh *et al*.[[12](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable#ref12)] found the contrary. Women are innately more receptive than men to emotional signals, a quality that can contribute to a better understanding and hence, to a better empathetic relationship.Age directly correlated with a higher EI. Life experiences are an important contributory factor in the development of EI. As individuals mature, they become more sensitive to the feeling of others, to a large extent.[[13](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable#ref13)–[15](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable#ref15)]Total Empathy and ability to feel for others were higher in subjects who were in regular contact with their families. The concepts of understanding and managing emotions are first learned in the family, from parents and family environment; family life being our first school for emotional learning.[[2](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable#ref2)] This emotional schooling operates not just through the things parents say and do directly to children, but also in the models they offer for handling their own feelings and those that pass between husband and wife.[[16](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable#ref16)]Furthermore, married subjects had good EI similar to the finding of study by Azimi *et al*.[[17](http://www.ncbi.nlm.nih.gov/pubmed/20646037)] Adjustability, good communication, trust, and understanding are the pillars of a successful marriage. Managing so many emotions due to the presence of a significant other in one's life, and at times an extended family, helps one keep one's emotions in check and resolve conflicts amicably. This attitude, in all probability, gets translated into other aspects of the individuals’ life, including patient care.The converse, that is, having some or the other major problem at home (ill patient, property issue, interpersonal problems, and so on) reflected as more self-awareness and suffering. With life experiences, there is increased interpretation of human expression, and thus a corresponding increased response with increased sensitivity and empathy.[[13](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable#ref13)]Satisfaction with one's profession, as well as the choice of the same, translated into higher EI in our study population. Intrinsic dissatisfaction with the job profile, would definitely be a deterrent in patient care, as seen here.Similar to job satisfaction, is the impact of time given to one's self and lifestyle on work productivity. EI correlated well in those with good sleep and those who spend enough time in recreational activities and exercise.[[2](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable#ref2)]An individual who thus had good self-control of emotions had good relations with their superiors. When we are aware and in control of our emotions, we can think clearly and creatively, manage stress and challenges, communicate well with others, and display trust, empathy, and confidence in all our relationships, and this is seen as a positive attribute by our superiors.[[18](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable" \l "ref18)] Anger, on the other hand led to a lack of self-control and empathy, in our population. Anger, is a reflection of inability to manage one's own emotions, and understandably thus, can cause more harm than good.In the medical field, however, burn out is often seen in health care workers. Self-motivation is thus required to keep one going. Motivation was higher in postgraduates who attended a communication skills workshop at least once in their residency. Therefore, it is safe to say that emotional intelligence and communication skills go hand in hand. Good EI includes ability to understand and control emotions, to be empathetic, to be socially competent, and so on and these qualities in turn improve the overall communication skills. Emotional Contagion was more in those who knew what Emotional Intelligence meant (*P*=0.01), either through self-generated knowledge or otherwise. The impact of structured soft skills training in this population would make very interesting analysis in future studies.* [Other Sections▼](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable)

CONCLUSIONSMore than 70% residents scored less than 20, out of which more than 30% scored less than 15 in all the domains of EI (significant score being >20 for good EI).No relation was found between the specialty chosen and EI.Factors correlating with good EI* Male subjects
* Less work hours (10–30 h/week)
* Good sleep (50–60 h/week)
* Good relations with superiors and colleagues
* Married residents
* Attendance in at least one Communication Skills Workshop

Factors correlating with poor EI* High level of Clinical Anger
* More work hours (>50 h/week)

Factors correlating with good Empathy* Male subjects
* Married residents
* Experience of major problems in life

Factors correlating with poor Empathy* High level of Clinical Anger

Implications1. Properly allotted work hours, adequate sleep, good relations with colleagues and superiors are important aspects that determine emotional intelligence in medical postgraduates.
2. Enhanced support system in marriage, learning in communication skills workshops, and self-experiences of emotional problems contribute in building EI.
3. Development of EI, having empathy, and recognition of clinical anger at a postgraduate level may help to set a template for early development of the same.

Limitations of the study1. Poor sample distribution–more male subjects.
2. Unequal speciality distribution–more residents from clinical faculties studied.
3. Personality factors not studied.
4. Cross-sectional study. Longitudinal design might yield a better analysis.
5. Reporting bias as questionnaire was self-rated.

Footnotes**Source of Support:** Nil**Conflict of Interest:** None declared.* [Other Sections▼](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3136016/?report=printable)

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