ASSOCIATION OF EMOTIONAL INTELLIGENCE WITH ACADEMIC PERFORMANCE AMONG MEDICAL STUDENTS IN SOUTH INDIA

BHASKARAN UNNIKRISHNAN[1], DARSHAN BB[1*], VAMAN KULKARNI[1], REKHA THAPAR[1], PRASANNA MITHRA[1], NITHIN KUMAR[1], RAMESH HOLLA[1], AVINASH KUMAR[1], RITHIKA SRIRAM[2], NAMITHA NAIR[2], JUANNA[2], SANJANA RAI[2], HUWWA NAJIZA[2]

[1]Department of Community Medicine, Kasturba Medical College, Manipal University, Mangalore, Karnataka, India. [2]MBBS Student, Kasturba Medical College, Manipal University, Mangalore, Karnataka, India. Email: drdarshanbb@gmail.com

ABSTRACT

Objective: The present study was designed to assess the association of emotional intelligence (EI) with academic performance among medical students.

Methods: A self-administered semi-structured questionnaire was used to collect the information. Schutte self-report EI test was used for the study and the items were scored from 1 (strongly disagree) to 5 (strongly agree) based on 5-point Likert scale. Data were analyzed using SPSS version 11.5. The scores of EI obtained were then categorized into low (33-77), moderate (78-121) and high (122-165). The results obtained were then expressed as proportions, statistical test Chi-square was used and $p<0.05$ was considered statistically significant.

Results: A total of 532 participants were assessed for EI. Around 1.9% had low EI, 61.8% had moderate EI and 36.3% had high EI. Gender, academic performance and satisfaction with the career choice were found to be statistically significant with EI.

Conclusion: Significant association was found between that of EI and academic performance and efforts must be made to include the concept of EI into the medical curriculum.

Keywords: Emotional intelligence, Medical students, South India.

INTRODUCTION

A commitment to opt for the medical field will have a great effect on life events of a medical student and becoming a physician is a long road ahead. Initial years of medical training have been recalled as "living hell" by many physicians. In the preclinical years, students not only face the academic pressure but also face pressure because of being alone, fearing failure and extended dependence on their parents. In the clinical years, the problems are mainly due to conflicts with their peers or the teaching faculty and loss of an acquaintance with their friends in other rotations [1]. However, medical graduates must control emotions to excel academically and in clinical practice. Hence, emotional intelligence (EI) plays an important role just like the intelligence quotient (IQ). Few researches have noted that EI has four times more influence on the success in professional career when compared to IQ [2].

The concept of EI includes identifying, applying, understanding, and dealing with emotions [3]. EI is also essential for having better communication and inter-personnel skills. Better communication skills help to improve health outcomes and reduce the grievances of patients. In certain setups, the empathy factor has been inculcated into the curriculum as it can affect the communication skills of the students which in turn can indirectly affect their academic performance [4].

EI helps in enhancing positive social behavior among medical students. In recent years, due to technological advancements, more stress has been laid on clinical competence and provision of service while, doctor-patient relationship has taken a back seat. Only therapeutic relationship exists between doctor and patient, and the emotional aspects are often neglected. This aspect of doctor-patient relationship can be strengthened by stressing the importance of EI among medical students [5]. Training the future doctors in aspect of EI will help them in making rational decisions at the time of crisis and can easily adapt to the constantly changing medical field. It helps them in understanding their own emotions and patients in a better manner [6].

Even though many studies have been conducted on the effect of EI on work performance, very few studies have been done on the effect of EI on academic performance. Some studies show a significant relationship between EI and academic performance whereas few studies show only tentative association or no association at all. Hence, there is a need to conduct further research on the influence of EI on the academic performance of medical students. Hence, the present study was conducted to fill the gap and paucity in researches related to the effect of EI on performance in academics.

METHODS

Ethical clearance was obtained from Institutional Ethics Committee of Kasturba Medical College, Mangalore (affiliated to Manipal University), prior to commencement of the study. This cross-sectional study was carried out among the medical students of Kasturba Medical College, Mangalore during March to April, 2014. The study participants included students in 2nd, 3rd, and 4th year of MBBS. The sampled population consisted of students in these MBBS years, which at any point of time include 750 students (250 students per MBBS class). As no comparable academic performance parameter was available for the first MBBS students, they were excluded from the study. Students from the respective batch of MBBS, who were not present on the day of data collection were again approached on the consecutive day, and if found absent again then they were considered as dropout. Students who did not consent to participate were excluded from the study. Only the completed proformas were used for final analysis. Finally, the study included 532 subjects. After obtaining the permission from the head of the institution, data collection was done using a semi-structured questionnaire which had two sections. Section A included questions

on baseline characteristics of the study participants and Section B included Schutte self-report EI test questionnaire. The items of the questionnaire were assessed by 5-point Likert scale, in which 1 being strongly disagrees to 5 being strongly agree. For the purpose of analysis and comparison, the EI scores of the participants were categorized into low (33-77), moderate (78-121), and high (122-165). The collected data were entered and analyzed using SPSS version 11.5. Fischer exact test was used for qualitative data analysis and $p<0.05$ was considered significant. Descriptive statistics was presented as percentages.

RESULTS

In the present study, the mean age of the students was 20.87 (20.87±1.42). Majority of the students were females (n=316, 59.4%), and females predominated males in the ratio of 3:2. Majority (n=250, 47%) of the students secured first class, followed by distinction (n=128, 24.1%) and second class (n=120, 22.6%) while (n=34, 6.4%) had failed in their previous university examinations as shown in Table 1.

Students were classified based on the EI. Majority (n=329, 61.8%) of the students had moderate EI and high EI was seen in (n=193, 36.3%) of the students. Only (n=10, 1.9%) of the students were found to have low EI.

Higher proportion of students who belonged to high EI category secured either first class or distinction as shown in Table 2. Academic performance of the students was found to be statistically significant (p=0.001) with EI.

Table 3 shows the association between baseline characteristics of study subjects with EI category. Gender (p=0.008), type of stay (p=0.01) and satisfaction with career choice (p=0.001) were identified as significant variables. Staying away from parents for a longer duration (>3 years) was not found to be statistically significant. In the category of high EI, most of them (n=126, 65.2%) were female students and in low EI category males constituted a majority. Majority (n=179, 92.7%) of the people in category of high EI were satisfied with their career choice and none of the student with low EI had scored distinction in the exams.

DISCUSSION

Trow (1956) defined academic achievement as "knowledge attaining ability or degree of competence in school tasks usually measured by standardized tests and expressed in a grade or units based on pupils' performance." Various factors have been assessed by researchers such as motivation, parenting styles, socio-economic status learning strategies and social behavior which can influence academic achievement [7].

Contrary to previous belief that only IQ influences the academic performance, Goleman in 1996 believed that EI also has a major role. Temperament of a pupil has an important role in academic performance [8]. A review conducted by Scechtman concluded that along with academic needs social and emotional dimensions must also be targeted to enhance performance [9]. Underachievers are more anxious, self-derogatory, more defensive, feel turned down and keep more impossible goals as mentioned in a study done by Gaver and Goliez [10].

In the present study, significant association was found between EI and academic performance. A study conducted among medical students in Malaysia noted that EI played an important role in academic success whereas in a study conducted by Chinmay *et al.* in India found that EI has inverse relation with academic success [11,12]. Studies conducted by Austin among medical students only found tentative evidence between EI and academic performance without any conclusive relationship [13,14]. Positive association between EI with academic performance was found in a study conducted in Nigeria among secondary school students. Similar results were also found in other studies [15-17]. Students with better EQ may be in a better position to understand the emotions of others and themselves. They can handle stress better and are good at problem-solving. Another positive quality is better intrapersonal and interpersonal skills.

Table 1: Baseline characteristics of study subjects (N=532)

Characteristics	N (%)
Gender	
Male	216 (40.6)
Female	316 (59.4)
Semester	
Fourth	177 (33.3)
Sixth	190 (35.7)
Eighth	165 (31.0)
Grade in the previous university examination	
Distinction	128 (24.1)
First class	250 (47.0)
Second class	120 (22.6)
Fail	34 (06.4)
Satisfaction of career choice	
Yes	475 (89.3)
No	57 (10.7)

Table 2: Association of EI with academic performance of the students (N=532)

Grade in previous university examination*	EI (N (%))			p value#
	Low (n=10)	Moderate (n=329)	High (n=193)	
Distinction	0	74 (22.5)	55 (28.5)	0.001*
First class	3 (30)	153 (46.5)	94 (48.7)	
Second class	3 (30)	85 (25.8)	31 (16.1)	
Fail	4 (40)	17 (5.2)	13 (06.7)	

#Fisher exact test, *Significant at p<0.05. EI: Emotional intelligence

Table 3: Baseline characteristics of the participants in association with EI (N=532)

Baseline characteristics	EI (N (%))			p value*
	Low (10)	Moderate (329)	High (193)	
Gender				
Male	8 (80)	141 (42.9)	67 (34.8)	0.008*
Female	2 (20)	188 (57.1)	126 (65.2)	
Satisfaction with career choice				
Yes	5 (50)	291 (88.4)	179 (92.7)	0.0001*
No	5 (50)	38 (11.6)	14 (07.3)	
Stay				
Alone	6 (60)	66 (20.1)	29 (15)	0.001*
Roommate or parents	4 (40)	263 (79.9)	164 (85)	
Duration of stay away from parents (in years)				
<3	5 (50)	148 (49.7)	84 (46.4)	0.453
>3	5 (50)	150 (50.3)	97 (53.6)	

Significant at p<0.05. EI: Emotional intelligence

Women are believed to have higher EI due to social or biological factors. Biologically, emotions are processed differently in the cerebellum in the two genders. In females, a larger area of the brain is involved with processing of emotions as compared to males. Upbringing of women is different from males. Women are taught to maintain better social relationship with others. Socially women are expected to express their emotions and males to withhold their emotions. Women express their emotions easily and more frequently [18]. A study conducted among students of London Medical School showed that females have higher EI [19].

In India, studies conducted at Chandigarh among adolescents and at Mangalore among medical students showed that females have higher EI than males [20,21].

Findings of the present study are in conformity with the above findings.

In a study conducted in Kanchipuram among 205 medical students aged between 18 and 21 years, 92.19% had high emotional quotient, and 7.80% had moderate emotional quotient. However, these values are much higher when compared to our study in which 36.3% had high, and 61.8% had moderate EI [22]. Our study found a positive association between EI and satisfaction with career choice which was similar to findings of the study conducted by Saeedi *et al.* in Iran [23].

Our study was based on self-reporting tests. However, performance-based tests may be a better measure of EI as there may be a bias in reporting in self-rated questionnaires. Non-inclusion of personality-related factors was one more limitation of the study. A follow-up study can be conducted to further strengthen the findings of the present study. Efforts must be made to include the concept of EI in the medical school curriculum. By stressing on the importance of EI in medical students, their relationship with patients can be made better. Counseling can be provided to students based on EI scores, and targeted interventions can enhance their academic performance.

CONCLUSION

The findings of our study show that EI has got a profound influence on the academic performance of medical students. Hence, training of medical students with regards to EI either in the form of inclusion in the routine curriculum or through workshops can be considered. Further research should be conducted in this area to increase our understanding regarding the role of EI on the students' performance.

REFERENCES

1. Shaw DL, Wedding D, Zeldow P, Diehl N. Special problems of medical students. In: Wedding D, editor. Behavior and Medicine. Seattle: Hogrefe & Huber; 2001. p. 66-84.
2. Goleman D. Apples and applesauce. Issues Recent Dev Emot Intell 2003;1(3):425-48.
3. Mayer JD, Salovey P. What is emotional intelligence? In: Salovey P, Sluyter D, editors Emotional Development and Emotional Intelligence: Implications for Educators. New York, NY: Basic Books; 1997. p. 3-31.
4. Grewal D, Davidson HA. Emotional intelligence and graduate medical education. JAMA 2008;300(10):1200-2.
5. Romanelli F, Cain J, Smith KM. Emotional intelligence as a predictor of academic and/or professional success. Am J Pharm Educ 2006;70(3):69.
6. Bejjani J. Emotional intelligence: Use in medical education and practice. Mcgill J Med 2009;12:4.
7. Trow WC. Psychology in Teaching and Learning. Boston: Houghton Mifflin Company; 1956.
8. Wuensch KL, Lao RC. Academic performance related to achievement, motive and locus of control resource in education. J Educ Psychol 1987;11:11-23.
9. Shechtman Z. Child group psychotherapy in the school at the threshold of a new millennium. J Couns Dev 2002;80(3):293-9.
10. Gaver D, Goliez H. Academically unpredictable school children: Their attitudes toward school subjects. J Educ Res 2000;77:273-6.
11. Shah CJ, Sanisara M, Mehta HB, Vaghela HM. The relationship between emotional intelligence and academic achievement in medical undergraduate. Int J Res Med Sci 2014;2(1):59-61.
12. Chew BH, Zain AM, Hassan F. Emotional intelligence and academic performance in first and final year medical students: A cross-sectional study. BMC Med Educ 2013;13:44.
13. Austin EJ, Evans P, Goldwater RV, Potter V. A preliminary study of emotional intelligence, empathy and exam performance in first year medical students. Pers Individ Dif 2005;39:1395-405.
14. Austin EJ, Evans P, Magnus B, O'Hanlon K. A preliminary study of empathy, emotional intelligence and examination performance in MBChB students. Med Educ 2007;41(7):684-9.
15. Parker JD, Duffy J, Wood LM, Bond BJ, Hogan MJ. Academic achievement and emotional intelligence: Predicting the successful transition from high school to university. J First-Year Exp Stud Transit 2005;17:67-78.
16. Parker JD, Sumerfeldt LJ, Hogan MJ, Majeski SA. Emotional intelligence and academic success: Examining the transition from highschool to university. Pers Individ Dif 2004;36:163-72.
17. Mahyuddin R, Elias H, Noordin N. Emotional intelligence, achievement motivation and academic motivation among students of the public and private higher education institutions. Int J Divers Organ Communities Nations 2009;9(4):135-44.
18. Fernández-Berrocal P, Cabello R, Castillo R, Extremera N. Gender differences in emotional intelligence: The mediating effect of age. Behav Psychol Psicol Conductual 2012;20:77-89.
19. Todres M, Tsimtsiou Z, Stephenson A, Jones R. The emotional intelligence of medical students: An exploratory cross-sectional study. Med Teach 2010;32(1):e42-8.
20. Katyal S, Awasthi E. Gender differences in emotional intelligence among adolescents of Chandigarh. J Hum Ecol 2005;17(2):153-5.
21. Shetty S, Venkatappa KG, Parakandy SG, Sparshdeep EM, Das SK. Assessment of emotional intelligence in first year medical students: A questionnaire based study. IOSR J Dent Med Sci 2013;3(4):23-6.
22. Zareena S, Santakumari VB. The emotional quotient and personality status of medical and engineering students. Int J Med Health Sci 2013;2(4):429-32.
23. Saeedi N, Pazvari MH, Masouleh SA, Mousabian SI. Studying the influence of emotional intelligence on career success. J Basic Appl Sci Res 2012;2(12):12255-60.