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ORIGINAL ARTICLE

Emotional Intelligence, Perceived Stress, and Academic Performance: A Cross-sectional study on Medical Undergraduates

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ABSTRACT

Researches have shown a significant relationship between Emotional intelligence, perceived stress, and academic performance of the students. However, no such data were available for Pakistani medical students. The present study is a cross-sectional study conducted on 1st year and 2nd year medical students of CMH Lahore Medical College, Lahore. 240 students were selected and evaluated on Perceived stress scale (PSS) and Schutte's Self-Report Emotional Intelligence Test (SEIT). The results show an inverse relationship between Emotional intelligence and perceived stress in the medical students (p=0.008). No statistically significant correlation between academic performance and EI of the students was found. Enhancing EI might help the students to contend better with stress and it will cultivate better management and handling in their professional life.

Keywords*: Emotional Intelligence, Perceived Stress, Academic Performance, Perceived stress scale (PSS)*

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INTRODUCTION

For the past two decades, there are growing numbers of research on another aspect of intelligence, known as the emotional intelligence (EI). Skills such as self-control, determination, motivation and being sensitive to the emotions of others are collectively termed as Emotional Intelligence [1]. Different scholars and researchers have explained the concept differently with a collection of various skills. John Mayer and Peter Salovey proposed a model consisting of four branches which include capability to discern one's own and other's emotions accurately, capacity to use emotions to expedite thinking, ability to discern emotions and the signals carried by them, and the skill to govern emotions to accomplish specified goals [2]. Generally speaking, emotional intelligence is one's ability to comprehend and manage emotions to mitigate stress, communicate with efficacy and to empathize with the other people.

Emotional intelligence is getting popular in Medicine as well due to its significance for medical staff when dealing with patients[3]. Better intrapsychic Emotional Intelligence may also be pertinent to elevated stress which health care workers constantly face in their working environment [4]. Accreditation Council for Graduate Medical Education (ACGME) has described six core proficiencies for a doctor which are an essential component of EI as well; professionalism, patient care, interpersonal and communication skills, system-based practice, practice- based learning and medical knowledge [5]. Furthermore, some previous researches have described a positive relationship between EI and Academic performance[6,7] and it is also known that self-perceived stress is negatively associated with EI [3].

Number of researches have been conducted regarding academic performance and stress in Pakistan. The results indicated a variety of stress sources and a generally elevated level of stress in medical students. The results also described that poor academic performance is associated with higher level of stress [8, 9].

Emotions are usually ecumenical, however they are known to be strongly impacted by cultural factors [10]. Indian sub-continent is a land to about 20% of world population with quite similar cultural norms and practices. Studies discussing the relationship between EI,PS and their association are reported from countries including Sri Lanka, [11] and India [12]. But up till now, to our knowledge there has not been any study looking at the relationship between academic performance and Emotional Intelligence in medical student from Pakistan.

The present study aims to evaluate the relationships between Emotional Intelligence, Perceived Stress and academic performance among Pakistani medical and dental undergraduates and the effect of socio-demographic factors on EI.

MATERIAL AND METHODS

This descriptive cross-sectional study was conducted at Combined Military Hospital, Lahore Medical College and Institute of Dentistry, Lahore, Pakistan in February 2020 after consent from ethical review committee. The study population consisted of 1st year and 2nd Year medical students from MBBS, BDS and Allied Health Sciences. The sample size calculated was 240 with a 95% confidence interval and 5% error margin. 240 participants filled a questionnaire subsequent to giving an informed written consent. The questionnaire, consisting of three sections was administrated. Section A consisted socio-demographic questions (age, gender, monthly family income, accommodation whether being day-scholar or hostellite, parent's employment status, participants' involvement in extra-curricular activities and mode of choice of profession whether it was by will or by compulsion). Section Bassessed the Emotional Intelligence of the participants using, Schutte Self-Report Emotional Intelligence Test (SEIT),a 33-item self-assessment tool [13]. Section C evaluated the Perceived Stress of the participants using Perceived Stress Scale (PSS) [14]. It consisted of 10 questions on a five-point Likert scale. Scores for EI ranged from 33-165 and for PSS from 0-40 with a higher score indicating a higher level. Academic performance was evaluated on the basis of percentage in last appearing examination.

Statistical Analysis

The data was analyzed using Statistical Package for Social Sciences (SPSS) version 25 (IBM, NY). Demographic information was presented in the form of frequency and percentages using descriptive analysis. Relation between the variables were found using Pearson's correlation. P value was calculated using two-tailed association test. A p value less than 0.01 was regarded significant.

RESULTS

SOCIO-DEMOGRAPHIC CHARACTERISTIS:

Table 1 gives a summary of demographic, socioeconomic information, mean EI and PSS values, and percentage of marks obtained by the participants in their last exams. Sample size was 240. The questionnaire was filled by 125 undergraduates (UGs) from 1st year and 114 UGs from second year out which 61.8% (n=149) belonged to MBBS, 19.1% (n=46) belonged to BDS and 18.7% (n=45) belonged to Allied Health Sciences. 58.5% (n=141) of the participants were male while 41.5% (n=99) were female. Majority of the participants (90.9%, n=219) indicated that they selected this profession by choice. Majority of the participants (67.2%, n=162) described their involvement in extra-curricular activities. As far as parental employment status is concerned, 78.8% (n=190) fathers and 2.5% (n=6) mothers were employed while in 18.3% (n=44) cases both were employed. Average monthly income for majority of the participants (77.6%,n=187) was between 100,000-400,000 Pakistani Rupees. (Average family income in Pakistan is about 80,000 PKR which is equivalent to 479USD.)

RESULTS OF SCHUTTE SELF REPORT EMOTIONAL INTELLIGENCE TEST:

The mean EI value of the sample is 118.25 (Sd.= $\pm$ 16.92). The results show no statistically significant correlation between gender and EI value. The mean EI value in female was 116.77$\pm$19.44 and 120.34$\pm$ 12.272 in males (d=0.1, p=0.1). Similarly, no statistically significant correlation was observed between EI value and participation in extracurricular activities (d=0.11, p=0.089). Likewise, there was no significant correlation observed in the participants between EI value and joining the profession by compulsion or by choice (r=0.096, p=0.137). The results divulge no association between EI value and monthly family income and employment status of the parents on the participants.

RESULTS OF PERCEIVED STRESS SCALE ADMINISTRATION:

The mean PSS value of the sample is 21.90$\pm$5.350. The results show no significant association between PSS value and gender, family income, and parental employment status. Furthermore, the PSS value was also not influenced by engagement in extracurricular activities, choice of medicine by compulsion or by will, and frequency of co-curricular activity.

No significant association was found between percentage of marks obtained in the last appeared exam and EI value or PSS value.

The only statistically significant association was between EI value and PSS value (r=.171,p=0.008). Participants having a higher EI value showed a lesser value in perceived stress scale and vice -verse. (Table 2)

Table I: Demographic, Socio-economic characteristics, EI, PSS values, and Academic Performance in Last Examination of the 1st Year 2nd year Medical Undergraduates of CMH Lahore Medical College, Lahore

Variable (Item)	Frequency (Percentage) Mean ±St. Deviation
Gender	
Male	141 (58.5%)
Female	99 (41.5%)
Year of Study	
1st Year	125 (51.9%)
2nd Year	114 (47.3%)
Residence	
Hostellite	130 (53.9%)
Day- Scholar	110 (45.6%)
Discipline	
MBBS	149 (61.8%)
BDS	46 (19.1%)
Allied Health Sciences	45 (18.7%)
Parent Employment Status	
Father Employed	190 (78.7%)
Mother Employed	6 (2.5%)
Both Employed	44 (18.3%)
Family Income	
1-4 Lacs	187 (77.6%)
5-9 Lacs	30 (12.4%)
10-14 Lacs	12 (5.0%)
>15 Lacs	11 (4.6%)
Engagement in Extracurricular Activity	
Yes	162 (67.2%)
No	78 (32.4%)
Choice of Profession	
By Compulsion	21 (8.7%)
By Choice	219 (90.9%)
EI Value	
Mean	118.25±16.921
Mean for Male	120.34±12.272
Mean for Female	116.77±19.444
PSS Value	
Mean	21.90±5.350
Mean for Male	20.17±4.976
Mean for Female	23.11±5.287
Percentage in Last Exam	
50-60%	5 (2.1%)
60-70%	43 (17.8%)
70-80%	56 (23.2%)
80-90%	73 (30.3%)
90-100%	63 (26.1%)

Table II: Correlation between EI and PSS values of 1st year and 2nd year medical undergraduates of CMH Lahore Medical College, Lahore

		EI_Value	PSS_Value
EI_Value	Pearson Correlation	1	-.171**
	Sig. (2-tailed)		.008
	N	240	240
PSS_Value	Pearson Correlation	-.171**	1
	Sig. (2-tailed)	.008	
	N	240	240
**. Correlation is significant at the 0.01 level (2-tailed).			

DISCUSSION

To our knowledge, this is the first study in Pakistan considering association between Emotional Intelligence, perceived stress, and various socio-economic and educational variables of the medical students. Our study showed that a higher level of Emotional Intelligence was associated with a decreased perceived stress. These results are in congruence with previous studies done elsewhere which demonstrated that a higher level of EI can help a person in reducing stress and coping better with stressors. This relationship was observed significantly in medical students, nursing students, doctors, and other health professionals [15-18]. Researches have demonstrated that students of medical profession have a higher level of stress and physiological distress as compared to normal population during their course of study [19]. Hence, devising methods to sufficiently improve EI of medical students would help them better manage their stress during studies and professional challenges in future.

Our study demonstrated no significant association between gender and EI value. Nevertheless, the effect of gender on emotional intelligence has been extensively debated for years with a number of studies supporting it [20, 21] and an equal number of studies negating it [22, 23].

The results of our study suggest no significant correlation between engagement in extracurricular activities. The results are somewhat similar with a previous study done on medical students in Sri-Lanka [10]. However, a previous study suggests that combat sports can foster EI [24]. As such sports are not common among students especially medical students in Pakistan, this might be a reason that our study showed no significant association between engagement in extracurricular activities and EI value.

The EI value did not differ much with the change of year of study or degree. Since all the students in the present study were of a similar socio-economic background, it can be assumed that our curriculum and environment did not either improve or deteriorate the EI value of the students. Similar results are reported in a study done elsewhere.[10]

Studies have shown that EI value can be increased with deliberate practices and exercise, unlike IQ which does not change significantly over a person's course of life.[25]EI have shown that it is associated with more pro-social behaviors, improved empathy towards patients and a better patient care. Hence, the academic calendar and the curriculum for medical students should be revised for an EI based education. This measure may help nurture their communication skills and professionalism.

STUDY LIMITATIONS

This study was conducted on medical students from a single medical college. So, the results might not be generalized to all the medical students. Furthermore, the study might be affected because of limitations of instruments used. The PSS questionnaire determined stress level in previous month, which might subject to fluctuations. Therefore, large scale studies using multi-rater questionnaires should be done to further evaluate the case. Furthermore, prospective follow up should be done to look for causality.

CONCLUSION

Decreased level of stress was associated with a higher level of EI. Thus, enhancing the EI in the medical students will help them to decrease and better manage their stress which will in turn help them better cope with their study-load and also help them perform better in their professional life.

REFERENCES

1. Nasir M, Masrur R. (2010). An exploration of emotional intelligence of the students of IIUI in relation to gender, age and academic achievement. Bulletin of education and research. ;32(1). DOI: 10.12691/education-7-11-15
2. Salovey P, Grewal D. (2005). The science of emotional intelligence. Current directions in psychological science.;14(6):281-5. https://doi.org/10.1111/j.0963-7214.2005.00381.x

3. Austin EJ, Evans P, Goldwater R, Potter V. (2005). A preliminary study of emotional intelligence, empathy and exam performance in first year medical students. Personality and Individual Differences. 39(8):1395-405. https://doi.org/10.1016/j.paid.2005.04.014
4. Miri MR, Kermani T, Khoshbakht H, Moodi M. (2013). The relationship between emotional intelligence and academic stress in students of medical sciences. Journal of education and health promotion. 2. DOI:10.4103/2277-9531.115836
5. Arora S, Ashrafian H, Davis R, Athanasiou T, Darzi A, Sevdalis N. (2010). Emotional intelligence in medicine: a systematic review through the context of the ACGME competencies. Medical education. ;44(8):749-64. https://doi.org/10.1111/j.1365-2923.2010.03709.x
6. Chew BH, Zain AM, Hassan F. (2013). Emotional intelligence and academic performance in first and final year medical students: a cross-sectional study. BMC medical education.. 1;13(1):44.https://doi.org/10.1186/1472-6920-13-44
7. Hasegawa Y, Ninomiya K, Fujii K, Sekimoto T. (2016). Emotional intelligence score and performance of dental undergraduates. Odontology.;104(3):397-401. https://doi.org/ 10.1007/ s10266-015-0219-0
8. Sohail N. (2013). Stress and academic performance among medical students. J Coll Physicians Surg Pak. ;23(1):67-71. DOI: 01.2013/jcpsp.6771
9. 9.Talib N, Zia-ur-Rehman M. (2012). Academic performance and perceived stress among university students. Educational Research and Reviews. ;7(5):127-32. https://doi.org /10.5897/ERR10.192
10. Ranasinghe P, Wathurapatha WS, Mathangasinghe Y, Ponnamperuma G. (2017). Emotional intelligence, perceived stress and academic performance of Sri Lankan medical undergraduates. BMC medical education. ;17(1):1-7. DOI: 10.1186/s12909-017-0884-5
11. Joseph N, Joseph N, Panicker V, Nelliyanil M, Jindal A, Viveki R. (2015). Assessment and determinants of emotional intelligence and perceived stress among students of a medical college in south India. Indian journal of public health.;59(4):310. DOI: 10.4103/0019-557X.169666
12. Gupta A, Koolwal GD, Gehlot S. (2014). Study of perceived stress and emotional intelligence among 1st year medical undergraduates in India. Journal of contemporary medical education. 2(1):63-7. DOI: 10.5455/jcme.20131209094837
13. 13Jonker CS, Vosloo C. (2008). The psychometric properties of the Schutte emotional intelligence scale. SA Journal of Industrial Psychology. 34(2):21-30.https://doi.org/ 10.4102/sajip.v34i2.689
14. Cohen S, Kamarck T, Mermelstein R. Perceived stress scale. Measuring stress: A guide for health and social scientists. 1994;10:1-2.
15. Joseph N, Joseph N, Panicker V, Nelliyanil M, Jindal A, Viveki R. (2015). Assessment and determinants of emotional intelligence and perceived stress among students of a medical college in south India. Indian journal of public health. ;59(4):310. https://doi.org/ 10.4103/0019-557x.169666
16. Joseph N, Joseph N, Panicker V, Nelliyanil M, Jindal A, Viveki R. (2015). Assessment and determinants of emotional intelligence and perceived stress among students of a medical college in south India. Indian journal of public health. ;59(4):310. https://doi.org /10.1016/ j.nedt.2010.12.023
17. Wons A, Bargiel-Matusiewicz K. (2011). The emotional intelligence and coping with stress among medical students. Wiadomoscilekarskie (Warsaw, Poland: 1960). 64(3):181. PMID: 22335141
18. Naidoo S. (2008). Emotional intelligence and perceived stress: scientific. South African Dental Journal. ;63(3):148-51. https://hdl.handle.net/10520/EJC158697
19. Guthrie E, Black D, Bagalkote H, Shaw C, Campbell M, Creed F. (1998). Psychological stress and burnout in medical students: a five-year prospective longitudinal study. Journal of the Royal Society of Medicine. 91(5):237-43. https://doi.org/10.1177/014107689809100502
20. Dyrbye LN, Thomas MR, Shanafelt TD. (2006). Systematic review of depression, anxiety, and other indicators of psychological distress among US and Canadian medical students. Academic medicine. ;81(4):354-73.PMID: 16565188
21. Petrides KV, Furnham A. (2000). Gender differences in measured and self-estimated trait emotional intelligence. Sex roles. ;42(5-6):449-61. https://doi.org/10.1023/A:1007006523133
22. Por J, Barriball L, Fitzpatrick J, Roberts J. (2011). Emotional intelligence: Its relationship to stress, coping, well-being and professional performance in nursing students. Nurse education today. 31(8):855-60. https://doi.org/10.1016/j.nedt.2010.12.023
23. Carr SE. (2009). Emotional intelligence in medical students: does it correlate with selection measures?. Medical education.;43(11):1069-77. https://doi.org/10.1111/j.1365-2923. 2009. 03496.x
24. 24.Szabo A, Urbán F. (2014). Do combat sports develop emotional intelligence?. Kinesiology: International journal of fundamental and applied kinesiology.;46(1):53-60. https://hrcak.srce.hr/123724
25. Scott J. (2013). How Healthcare Leaders Can Increase Emotional Intelligence. Radiology Management. PMID: 24358581