

ASSOCIATION OF EMOTIONAL INTELLIGENCE WITH ACADEMIC PERFORMANCE OF MEDICAL STUDENTS

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ABSTRACT

Objective: To determine the association of emotional intelligence with academic performance of medical student of Army Medical College, Rawalpindi.

Study Design: Cross sectional study analytical study.

Place and Duration of study: Army Medical College, Rawalpindi from Jan to Mar 2018.

Patients and Methods: Three hundred and forty-seven students of 2nd and 3rd year MBBS were included through convenience sampling. All those students who were under the treatment of psychiatrist or had any psychological problems were excluded from the study. Emotional Intelligence was measured using 'The Quick Emotional Intelligence Self-Assessment Questionnaire' adapted for the San Diego City College MESA Program from a model by Paul Mohapel. Academic performance of the students was measured by determining the marks in the last professional examination.

Results: Out of 347, thirty-one (8.9%) students were in low category of emotional intelligence, 241 (69.5%) were in moderate whereas 75 (21.6%) were in high emotional intelligence category. Predictive effect of emotional intelligence on academic performance was assessed by regression analysis which showed Unstandardized coefficient (B) as 0.07 with 95% confidence interval of 0.03-0.11 and *p*-value of 0.001. Academic performance was positively correlated with total emotional intelligence score ($r=0.12$, $p=0.001$), emotional awareness ($r=0.16$, $p=0.002$), emotional management ($r=0.12$, $p=0.02$) and social emotional awareness ($r=0.20$, $p<0.001$). However, the correlation was not significant with relationship management ($r=0.07$, $p=0.16$). There was no significant difference between the academic scores of students with moderate and high emotional categories (67.90 ± 6.33 vs. 68.10 ± 7.63 , $p=0.98$). However, the scores were significantly lower in low category as compared to moderate and high categories. (61.49 ± 7.95 vs. 67.90 ± 6.33 and 68.10 ± 7.63 , $p=0.001$ and <0.001 respectively).

Conclusion: Emotional intelligence is directly correlated with academic performance. Students with high emotional intelligence may outperform those with low intelligence.

Keywords: Academic performance, Emotional awareness, Emotional intelligence, Relationship management.

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INTRODUCTION

Emotional intelligence includes intrapersonal as well as interpersonal intelligences. The concept of emotional intelligence is based upon Dr Howard Gardner's Theory of Multiple Intelligences¹. Intrapersonal intelligence is the emotional competence which reflects the so called inner intelligence. It means knowing and regulating one's own emotions leading to enhanced emotional stability and motivation. Intrapersonal intelli-

gence is the basic prerequisite to move successfully in all other dimensions revolving 'self' or 'non-self'². Interpersonal intelligence which is the outer intelligence, reflects social competence. It is knowing and regulating other's emotions which lead to social stability and better relationships³. This may enhance emotional stability and motivation. Hence, the two kinds of intelligences work in a vicious cycle loop strengthening or weakening each other perpetually⁴. There is substantial evidence that emotional intelligence is a better predictor of success than intelligence quotient. On the basis of intelligence quotient, one may get into a field but the ultimate success in that field depends upon emotional intelligence⁵.

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The conventional view about academic success holds that it is entirely based upon intelligence quotient which is also called as logical intelligence⁶. It has been seen that many students high in intelligence quotient may have poor performance in academics. Academic performance seems to be the ultimate result of many personality traits working together⁷. Like all other segments of society, students also have to live in a social reality. Students don't work or study in isolation especially the medical students. Hence, they are challenged with emotional and social problems. It is assumed that incapability of medical students in emotional handling of themselves and others may adversely affect their potential for academic success.

We hypothesize that high emotional intelligence enhances academic performance of medical students. However, whether emotional and intelligence quotients work independent of each other or have interactions needs to be ascertained. Unlike intelligence quotient, emotional quotient can be enhanced with awareness and practice⁸. In case our research hypothesis is accepted, strategies may be devised to enhance emotional intelligence of medical students in an attempt to enhance their academic performance and perhaps their quality of life. Considering above, the current study was planned to determine the association of emotional intelligence with academic performance of medical student of Army Medical College, Rawalpindi.

METHODOLOGY

This cross sectional comparative study was carried out at Army Medical College, Rawalpindi from January to March 2018, after getting formal approval from Ethical Review Committee of the college. Written informed consent was obtained from all the participants. Students of 2nd and 3rd year MBBS of Army Medical College were included through convenience sampling. All those students who were under the treatment of psychiatrist or had any psychological problems were excluded from the study. Sample size was calculated using the software G-Power. Considering

the values of alpha as 0.05, beta as 0.2 and the difference for correlation coefficients between null and alternative hypothesis as 0.15, a sample size of 346 was calculated.

Emotional Intelligence was measured using a validated and reliable instrument 'The Quick Emotional Intelligence Self-Assessment Questionnaire' adapted for the San Diego City College MESA Program from a model by Paul Mohapel. This is a 40-item questionnaire with responses on a 5-point Likert Scale ranging from 0 to 4 corresponding to never, rarely, sometimes, often and always respectively. The total score ranges from 0 to 160 with higher score representing higher emotional intelligence. The questionnaire was divided into 4 subthemes with¹⁰ items each representing emotional awareness, emotional management, social emotional awareness and relationship management respectively. At an estimated response rate of 90% the questionnaire was distributed to 384 students. The duly filled questionnaires were returned by 347 students.

Academic performance of the students was measured by determining the marks in the last professional examination. For the sake of standardization, the marks of each class were converted to percentage.

Data were entered into SPSS version 24 for analysis. Frequency and percentage were calculated for categorical variables whereas mean and frequency for numerical variables. Association between emotional intelligence and academic performance was determined using Pearson Correlation test. Mean academic performance was compared across the three categories of emotional intelligence with One-way ANOVA along with the post-hoc test analysis. Alpha value will be kept at 0.05.

RESULTS

There were 197 (56.8%) male and 150 (43.2%) female students with mean age of 20.08 ± 0.95 years. One hundred and seventy-seven (51%) students were from 2nd year MBBS whereas 170 (49%) were from 3rd year MBBS class. Mean score of emotional intelligence was 105.56 ± 18.03

whereas mean score for academic performance was 67.37.

Table-I shows results of regression analysis for effects of emotional intelligence on academic performance. The regression model was statistically significant $F(1,345)=11.87$, p -value=0.001 and with an adjusted R-square value of 0.03.

Table-II shows correlation of total emotional intelligence score with academic performance.

different combinations of the three categories are shown in table-IV along with the p -values.

DISCUSSION

As contrast to the historical perspective where emotional intelligence was thought to be peripheral to the learning process, today it is considered as a necessary component of any educational system. Research on EI suggests that it is related to empathy and better academic perfor-

Table-I: Prediction of academic performance by emotional intelligence.

Predictor variable	Unstandardized coefficient (B)	95% confidence interval	p -value
Emotional intelligence	0.07	0.03-0.11	0.001*

Table-II: Correlation of academic performance with total emotional intelligence, emotional awareness, emotional management, social emotional awareness and relationship management.

	Academic performance	
	r-value	p -value
Total Emotional intelligence	0.12*	0.001*
Emotional awareness	0.16*	0.002*
Emotional management	0.12	0.02*
Social emotional awareness	0.20*	<0.001*
Relationship management	0.07	0.16

Table-III: Frequency and percentage of students in three categories of emotional intelligence.

Category of emotional intelligence	Frequency	Percentage
Low	31	8.9
Moderate	241	69.5
High	75	21.6

Table-IV: Comparison of academic performance across the three categories of emotional intelligence along (left side) with pair-wise post-hoc analysis (right side).

ANOVA p -value	Mean academic performance	Category of emotional intelligence	Post-hoc pair-wise analysis p -values		
				Low	High
<0.001*	61.49 ± 7.95	Low	<0.001*		
	67.90 ± 6.33	Moderate			
	68.10 ± 7.63	High		0.98	0.001*

Table also shows correlation of subthemes of emotional intelligence with academic performance. The values of correlation coefficient and statistical significance are also shown in the table.

Frequency and percentage of students in low, moderate and high emotional intelligence categories is shown in table-III.

Table-IV shows comparison of academic performance across the three categories of emotional intelligence. Pair-wise post-hoc comparisons of

performance. However, in clinical practice and medical studies, EI is considered very important as it is related not only to higher academic achievement but also to better doctor-patient relationship. Therefore, more literature support in terms of empirical studies are needed in order to establish a connection between academic performance and EI.

Our findings revealed that EI was a significant predictor of academic performance amongst 2nd year and 3rd year medical students. Such

findings indicate the direct effect of EI on academic performance in medical education. These findings are self explanatory as being emotionally intelligent enhances oneself to regulate their problem-solving abilities, inter-personal and intra-personal skills which are imperative in academic achievement. EI also lead to emotional management that enable an individual to ward off stress and anxiety which is associated with test taking and examination. In addition to this, emotional intelligence increases interpersonal skills needed to seek academic assistance from peers, resource persons and teaching staff. The present findings are in line with previous literature as well as with the general expectation of a positive relationship between emotional intelligence and academic performance^{9,10}. Ashwini Aithal and colleagues conducted a study in India to find out association of emotional intelligence with academic performance. The concluded that a positive correlation ($r=0.51$) existed between the two variables of interest¹¹. Similarly Ranasinghe *et al* reported that final year medical students who passed their exam in first attempt had higher emotional intelligence as compared to those who failed the exam¹².

The study findings further revealed that three subscales of emotional intelligence i.e., emotional awareness, emotional management and social emotional awareness were significantly correlated with academic performance among the present sample. These findings though quite consistent with earlier literature also warrant the understanding of the present four-dimensional EI model. This model is comprised of perceiving emotions, using emotions to facilitate one's own thinking patterns to understand and manage it appropriately¹³. In this way EI may act directly by facilitating and prioritizing thoughts. This underlying process may in turn regulate behaviours and individual adopt appropriate lifestyle choices ultimately resulting in benefitting academic performance¹⁴. Goleman in his new EI model necessitates the importance of EI more than IQ¹⁵. He viewed EI as a learned capability and competence that enable oneself to manage own feelings

so that they may be expressed appropriately and effectively in order to work smoothly towards achieving their goals.

The findings of the study, however also revealed that majority of the sample possessed moderate levels of EI and only one third of the sample were having high EI. These findings may be explained by the age range of this group of sample which is the time of emerging adulthood i.e., 18-25. In this developmental age range majority consider themselves neither adolescents nor adults. They investigate and concentrate on self and perceive instability due to change in status, relations, work and most importantly in education. In addition to this, these emerging adults also confront variety of emotional and social stressors along with lack of maturity which may affect their EI and academic performance¹⁶. Likewise majority of the sample exhibiting moderate levels of EI may be attributed to the stresses of the curriculum in medical education. Long hours of study along with various assignments can be troublesome for majority of adult students because of their inability to assign proper time between academic and non-academic interests.

CONCLUSION

The study concludes that emotional intelligence is directly correlated with academic performance. Students with high emotional intelligence may outperform those with low intelligence. This warrants the importance of emotional intelligence for all the stake holders. This study has implications for academia to integrate emotional intelligence into curriculum. Workshops, seminars etc may be organized by the institutions to enhance emotional intelligence of medical students which may result in better academic performance.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any authors.

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