Emotional Intelligence and Academic Performance of Undergraduate Medical Students of Bangladesh

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Abstract

Emotional Intelligence (EI) combines the important aspects of interpersonal and intrapersonal relationship, adaptability, mood and stress management skills which has an effect on students academic performance. It is also widely accepted as one of the dominant factor contributing to superior and professional performance. This cross-sectional study was aimed to measure the score of different dimensions of emotional intelligence of undergraduate medical students of Bangladesh to categorize the undergraduate medical students by their academic performance and sociodemographic background. The objectives of the study were also to relate the level of different dimensions of emotional intelligence with their academic and sociodemographic background using Genos Emotional Inventory (concise version) and additional questions relevant to the performance of the students. Genos Emotional Intelligence Inventory questionnaire (concise version) consists of 31 items with 5 answering options for each as per Likert scale and 5 additional questions related to academic performance. Confidentiality of the data and participants were maintained all through. Data were analyzed using SPSS 19. To determine internal consistency of the questionnaire Cranach's alpha was used. This Study was conducted at selected medical colleges of Bangladesh .out of nine, five were government and four were non- government, five from Dhaka and four from outside of Dhaka. Study period was one year. Undergraduate students of all four phase of MBBS course were study population. Sample size was 904, pretested self-administered semi-structured questionnaire were used to collect data. Medical college and students were selected by adopting convenient sampling technique. This study revealed that, mean score in male was 64.47 ± 8 and female it was 67.2 ± 38.14. The result of current study indicate that female undergraduate students had higher EI than their male counterpart. Among the different sub-groups of EI highest score EAO sub- group ,mean score was in male 70.90 ± 13.48 and in female 72.47 ± 12.34 . This study also showed the correlation of two variables (EI and Academic Performance) based from Pearson Correlation Coefficient is significant. It means that when EI of undergraduate medical students increases, their academic performance also trends to increase. Here nearly 9.9% of the variance in academic performance is explained by independent variables together. This study recommended that EI should be incorporated in undergraduate medical curriculum and should be taught with the details of learning outcome what are desired from registered medical graduate so that learning can be turned into practice.

Key words: Emotional intelligence, Academic performance. Undergraduate medical students

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Introduction

Emotional intelligence (EI) has been attracting a lot of attention since its inception in 1990. EImeans ability to monitor one's own and other feelings and emotion (Naeem et al,2012). In medical education and clinical practice EI is related to higher academic achievement and improved doctor patient relationship(Chew,Zain,Hassan.2013). EI is also reported to be predictor of the communication skills(Carr, 2009).

Many questionnaire (Mayer Salovey &Caruso 2000; Bar-On,1997,Petrides & Furnham 2001) assessing emotional intelligence in the workplace ahave been developed. Each tool has its own merits and demerits and has been tested in multiple institution of different countries. (Kamine, et al. 2018). Genos EI was originally conceptualized by Ben Palmer and Con Stough at Swinburne University. It was published as the Swinburne University Emotional Intelligence Test (SUIET; Palmer & Stough,2001) and appeared in numerous research paper as such. Since then it has been revised now being used widely in research and commercial setting as Genos EI. Full version consists of 70 items designed to measure the frequency with which an individual displays emotionally intelligent behaviors across seven dimensions. In addition to full item version of Genos EI inventory, two abbreviated version have recently been developed based on statistical and psychometric analysis reported in Gignac (2008). Two abbreviated versions include 31 -items Concise version and a14-items short version.

Now a days, the importance of improving the interpersonal skills, empathy, managing high stress situation are increasingly being recognized as essential to functioning doctor (Naeem et al, 2014)

Research on emotional intelligence among health professional is rising but little is known about medical students (Naeem et al, 2014)

In undergraduate MBBS curriculum importance of teaching of behavioral science is emphasized. To highlight the importance of EI among undergraduate students in Bangladesh we included additional questions other than Genos EI Inventory.

Research, however on, emotional intelligence and academic performance in undergraduate medical students is scarce worldwide and so far, my knowledge no research has been done on this topic in Bangladesh. So, research to explore the level of emotional intelligence and to find out the relation between EI and academic performance is far from due.

Methods and Materials:

It was a descriptive type of cross-sectional study. The study period was from 01 January 2022 to 31 December 2022)The study places were five were government and four were non- government medical college of from Bangladesh. Undergraduate students of all four phases of MBBS course were the study population . Sample size was 904 medical students. A self-administered structured questionnaire was used to collect data. It consist of 31items in a five –point Likert scale.(5) Almost always agree, (4) Usually agree ,(3) Sometimes agree,(2) Rarely agree (1) Never agree. Additional questionnaire consisting 5 items relevant to the context of performance. Medical colleges were selected purposely and available students who were willing to participate in the study were selected. Data were checked after collection of data and then entered into Statistical Packages for Social Sciences (SPSS) version 25 for analysis.

Results: The results of this descriptive type of cross-sectional study are organized according to the instruments used. A total of 904 undergraduate medical students provided their views through the self-administered questionnaire. This study was conducted at eight medical colleges of Bangladesh, out of which four were government and another four were non-government medical colleges. The responses of the questionnaires were analyzed and have been presented in the form of tables and charts with necessary description according to the objectives of the study.
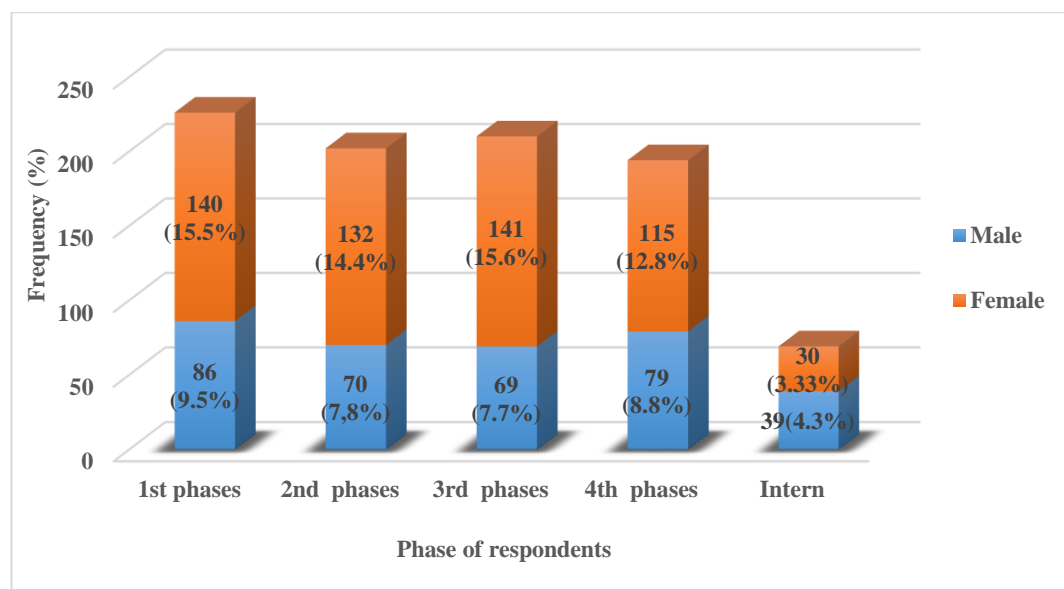

Figure 2: Distribution of the respondents by their gender and academic phase.

Figure1 bar diagram shows the distribution of 901 respondents according to gender and academic phase of study where 343(43%) were male and 558(61.9%) were female.

Maximum respondents from 3rd phase 210(23.3%) and minimum respondents from interns 69(7.7%).
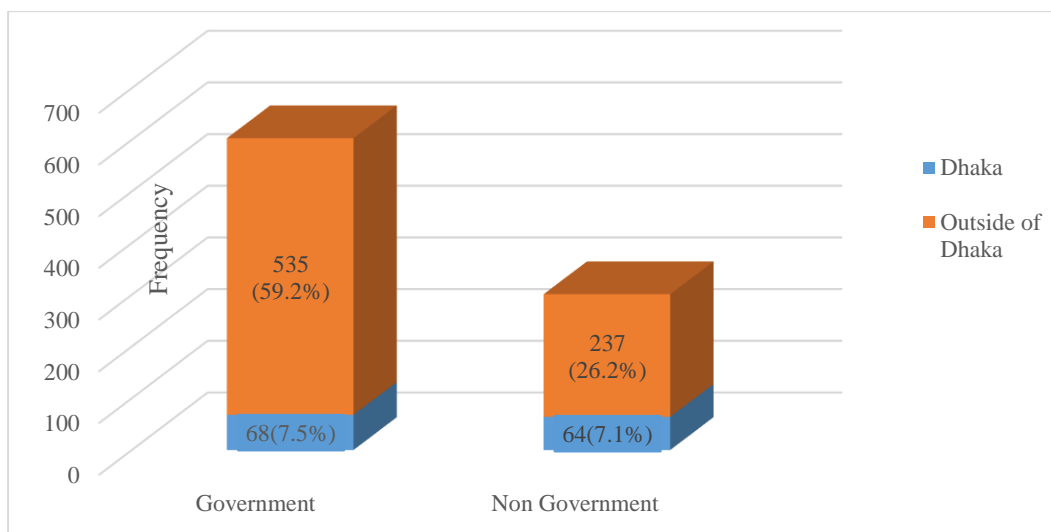
Figure 3. Distribution of respondents by ownership and location of Medical colleges

Figure 3 bar diagram shows that 488(53.98%) undergraduate medical students from government medical colleges,284 (38.42%) from non-government medical colleges that are located outside of

Dhaka and 68(7.5%) from government medical college,64(7.08%) from non-government medical colleges that are located within Dhaka.

Figure 4: Distribution of the respondents by their score (in percentage) of seven sub- groups of

Emotional Intelligence
ESA=Emotional Self Awareness, EE=Emotional Expression, ER=Emotional Reasoning=Emotional Awareness of others, ESM=Emotional Self-Management, EMO= Emotional Management of Others,
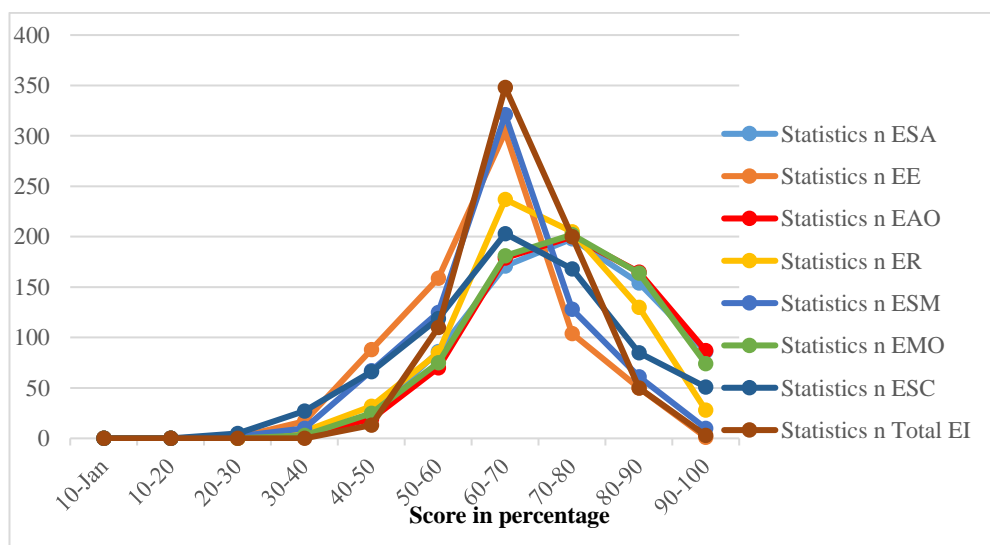
ESC=Emotional Self Control, Total EI=Total Emotional Intelligence

Figure 4shows that maximum score in 60 -70% in all sub-groups of EI and total EI

Table1: Distribution of statistics of different sub-group of Emotional intelligence (n=904)

Statistics	ESA	EE	EAO	ER	ESM	EMO	ESC	Mean EI
Mean	71.23	61.44	71.88	69.33	63.73	71.02	64.45	67.32
Median	70	60	70	72	64	70	65	67.1
Mode	65.00	64.00	65.00	76.00	64.00	70.00	65.00	63.23
Std. Deviation	13.5327	11.3673	12.7967	12.005	11.3575	13.0852	15.105	8.1488
Skewness	-0.160	-0.116	-0.140	-0.210	-0.084	-0.065	-0.127	0.135
Std. Error of Skewness	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091
Kurtosis	-0.116	-0.082	-0.248	0.043	0.376	-0.324	-0.119	0.085
Std. Error of Kurtosis	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181
Minimum	20.00	28.00	35.00	32.00	28.00	35.00	20.00	43.23
Maximum	100.00	92.00	100.00	100.00	100.00	100.00	100.00	91.61

ESA=Emotional Self Awareness, EE=Emotional Expression, ER=Emotional Reasoning=Emotional Awareness of others, ESM=Emotional Self-Management, EMO= Emotional Management of Others, ESC=Emotional Self Control, Total EI=Total Emotional Intelligence

Table 1shows maximum mean score was in EAO Sub-group (71.88) and minimum mean score was in EE sub-group

Table 6: Distribution of descriptive and inferential statistics of different sub-group of Emotional Intelligence in male and female (n=724)

Sub groups of EI	Gender	N	Mean (in percentage)	Std. Deviation (in percentage)	Statistics for Levine's Test for Equality of Variances		Statistics for independent sample t test			95% Confidence Interval of the Difference	
					F	Sig.	t	df	Sig. (2-tailed)	Lower	Upper
ESA	Male	273	70.4212	14.01503	0.942	0.332	-1.250	722	0.212	-3.33	0.739
	Female	451	71.7184	13.22399							
EE	Male	273	62.1392	11.05047	2.750	0.098	1.285	722	0.199	-0.59	2.83
	Female	451	61.02	11.54651							
EAO	Male	273	70.8974	13.48408	2.241	0.135	-1.607	722	0.109	-3.5	0.35

					F	Sig.	t	df		Lower	Upper
	Female	451	72.4723	12.33949							
ER	Male	273	69.6996	11.61315	0.200	0.655	0.651	722	0.515	-1.21	2.408
	Female	451	69.0998	12.24332							
ESM	Male	273	64.0293	11.18293	0.849	0.357	0.849	0.357	0.543	722	0.588
	Female	451	63.5565	11.47047							
EMO	Male	273	70.2747	13.63311	2.158	0.142	0.543	722	0.588	-1.24	2.183
	Female	451	71.4745	12.73617							
ESC	Male	273	66.4652	14.74837	0.696	0.404	2.800	722	0.005	0.965	5.491
	Female	451	63.2373	15.20406							
EI Grand total	Male	273	67.4702	8.18006	0.707	0.401	0.391	722	0.696	-0.98	1.472
	Female	451	67.2255	8.13745							

Table 6 shows that maximum score in both male and female was in EAO sub-group which was 70.89±13.48 and72.47±12.34 respectively. In independent sample t-test p< 0.05 in ESC sub-groups, this indicate that there is significant difference in score in male and female in ESC sub-group

Table 7: Descriptive and inferential statistics of different sub-group of Emotional Intelligence in government and non -government medical college(n=724)

Sub groups of EI	Ownership of Medical college	N	Mean (in percentage)	Std. Deviation (in percentage)	Statistics for Levine's Test for Equality of Variances		Statistics for independent sample t test			95% Confidence Interval of the Difference	
					F	Sig.	t	df	Sig. (2-tailed)	Lower	Upper
ESA	Gov MC	451	70.9424	13.53797	0.091	0.763	-0.733	722	0.464	-2.79893	1.27703
	Non Gov	273	71.7033	13.53549							
EE	Gov MC	451	60.2395	11.12256	0.388	0.533	-3.690	722	0.000	-4.88569	-1.49252
	Non Gov	273	63.4286	11.50813							
EAO	Gov MC	451	71.4967	12.71174	1.124	0.289	-1.032	722	0.302	-2.93892	0.91395
	Non Gov	273	72.5092	12.93454							
ER	Gov MC	451	68.6829	11.12651			-1.777	497.821	0.076	-3.59073	0.18002
	Non Gov	273	70.3883	13.28351							
ESM	Gov MC	451	63.2018	11.50079	0.803	0.371	-1.625	722	0.105	-3.12152	0.29430
	Non Gov	273	64.6154	11.08135							

EMO	Gov MC	451	70.1885	13.10716	0.072	0.788	-2.209	722	0.027	-4.17549	-0.24611
	Non Gov	273	72.3993	12.95545							
ESC	Gov MC	451	63.1375	14.75620	0.002	0.963	-3.032	722	0.003	-5.75381	-1.23131
	Non Gov	273	66.6300	15.44673							
EI Grand total	Gov MC	451	66.5703	8.02204	0.145	0.704	-3.192	722	0.001	-3.20124	-0.76312
	Non Gov	273	68.5525	8.22069							

Table 7 shows that in independent sample t-test p< 0.05 in EMO, ESC sub-groups and Grand total EI score, this indicate that there is significant difference in score in above mentioned sub-groups in government and private medical college.

Table 8: Descriptive and inferential statistics of different sub-group of Emotional Intelligence in respondents from medical college from Dhaka and outside of Dhaka (n=724)

Sub groups of EI	Location of medical college	N	Mean (in percentage)	Std. Deviation (in percentage)	Statistics for Levine's Test for Equality of Variances		Statistics for independent sample t test			95% Confidence Interval of the Difference	
					F	Sig.	t	df	Sig. (2-tailed)	Lower	Upper
ESA	MC Located at Dhaka	110	70.8182	13.17712	0.003	0.953	-0.354	153.610	0.724	-3.19342	2.22393
	MC Located outside of Dhaka	614	71.3029	13.60463							
EE	MC Located at Dhaka	110	63.1636	11.90908	0.553	0.457	1.727	722	0.085	-0n.27734	4.33751
	MC Located outside of Dhaka	614	61.1336	11.24973							
EAO	MC Located at Dhaka	110	72.3636	13.52383	0.367	0.545	0.432	722	0.666	-2.03050	3.17471
	MC Located outside of Dhaka	614	71.7915	12.67162							
ER	MC Located at Dhaka	110	68.3273	13.24027	3.588	0.059	-0.947	722	0.344	-3.61800	1.26278
	MC Located outside of Dhaka	614	69.5049	11.77283							
ESM	MC Located at Dhaka	110	63.4545	11.77748	.		-0.273	147.132	0.785	-2.72535	2.06441
	MC Located outside of Dhaka	614	63.7850	11.28972							
EMO	MC Located at Dhaka	110	70.3182	12.13981	1.138	0.286	-0.612	722			
	MC Located outside of Dhaka	614	71.1482	13.25281							

ESC	MC Located at Dhaka	110	67.9545	15.68461	0.061	0.804	2.650	722	0.008	1.06956	7.18481
	MC Located outside Dhaka	614	63.8274	14.92536							
EI Grand Total	MC Located at Dhaka	110	67.7595	8.34829	0.355	0.552	0.617	722	0.537	-1.13617	2.17798
	MC Located outside of Dhaka	614	67.2386	8.11689							

Table 8 shows that in independent sample t-test p< .05 in ESC sub-groups, this indicate that there is significant difference in score in ESC sub-group among the respondents from medical colleges located in Dhaka and outside of Dhaka.

Discussion:

In this study 343(38.1%) were male and 558 (61.9%) were female students from this data we see the general trend of medical education in Bangladesh. In both government and non-government medical colleges reflect the same male and female ratio (Figure 2). In another study it was stated that the gender ratio among medical students indicates 68% female to 32% male and this ratio is increasing day by day (Farzana et al. 2016). This is a positive development reflecting the women empowerment in the society despite many obstacles.

This current study demonstrate that Bangladeshi undergraduate medical students are emotionally intelligent. Total mean score in male was 64.47±8.18and in female it was67.23±8.14. The result of the current study indicate that female undergraduate students had higher EI score than their male counter part. Among the different sub-groups of EI Highest score was In EAO sub-groups mean (expressed in percent) score in male 70.90±13.48 and in female 72.47±12.34. A recent study among Japanese students (Fukuda 2011) also reported that means total emotional score was higher in female than in male.

The Model summary table 10(c) predicts that academic performance R as .351. R impact of emotional intelligence components on academic performance of undergraduate medical students squares as .123and adjusted R Square .099 indicating that only 9.9% of the variance of EI can be predicted by independent variables

The Beta Coefficients for mean marks of SSC and HSCESA, ER, EMO, p value <.05

There is positive and significant influence of above mentioned in independent variable on academic performance of undergraduate medical students of Bangladesh

Study of Michael Ewela Ebinabome performed a regress analysis using SPSS to predict the impact of EI on Academic performance dependent variable was academic performance and independent was five sub-type ofEI. The study showed that 40.3% of the variance of EI can be predicted by independent variables. In this study showed 9.9% of the variance of EI can be predicted by independent variables (adjusted R square=0.99). (Table 10c), this indicate that there may be others variables to affect academic performance.

Study of Michel Ewela Ebinabome also showed positive and significant influence on self-motivation (p=0.001), and empathy(p=0.001) on academic performance in Malayasia. The Beta Coefficient (Table 10e) showed that among the independent variables showed that SSC, HSC marks is very significant (.00), ER total (0.36), EMO total (0.015) were significant.

The main objective of the study was to examine the association between EI & Academic Performance. The statistical analysis revealed a significant positive association. (r=0.25, p<0.01) between EI& academic performance of medical students (table10 b).

The result of this study contrast study of Shah et al 2014 which reported a inverse relationship between EI & academic performance.

Conclusion:

In this study, the correlation of two variables based from Pearson Correlation Coefficient is significant. It means that when Emotional Intelligence of undergraduate medical students increases, their academic performance also trends to increase.

Training on Emotional on Emotional intelligence may be given to undergraduate medical students to improve their academic performance. Teacher should acquire a skill to exploit the advantages at each dimension of the students EI. Thus, They should have knowledge of EI ,so that they can help to develop the EI among their students.

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