

# Correlation Between Emotional Intelligence and Blood Groups Among Medical Students

Ruma Chakraborty<sup>1\*</sup>  
Rummana Khair<sup>2</sup>  
Rajat Sankar Roy Biswas<sup>3</sup>  
Pabitra Kumar Bhattacharjee<sup>4</sup>

<sup>1</sup>Department of Anatomy  
Chattagram Maa-O-Shishu Hospital Medical College  
Chattogram, Bangladesh.

<sup>2</sup>Department of Anatomy  
Southern Medical College  
Chattogram, Bangladesh.

<sup>3</sup>Department of Medicine  
Chattagram Maa-O-Shishu Hospital Medical College  
Chattogram, Bangladesh.

<sup>4</sup>Institute of Nuclear Medicine and Allied Sciences (INMAS)  
Bangladesh Atomic Energy Commission-  
Chittagong Medical College Campus  
Chittagong, Bangladesh.

\*Correspondence to:

**Dr. Ruma Chakraborty**  
Associate Professor  
Department of Anatomy  
Chattagram Maa-O-Shishu Hospital Medical College  
Chattogram, Bangladesh.  
Mobile : +88 01715 87 87 25  
Email : chakrabortyruma75@gmail.com

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## Abstract

**Background:** Emotional intelligence, known as emotional quotient or EQ, is the ability to understand, use and manage your own emotions in positive ways to relieve stress, communicate effectively and empathize with others. There are numerous lines of evidence that show the influence of blood groups on skills and abilities related to EQ. This study aims to compare the EQ-related skills and abilities among medical students with various blood groups.

**Materials and methods:** This cross sectional study was conducted in the Department of Anatomy, Chattagram Maa-O-Shishu Hospital Medical College from November 2021 to May 2022. Sample were collected from Chattagram Maa-O-Shishu Hospital Medical College and Southern Medical College. The responses are entered as data into the Statistical Package for Social Science (SPSS) version 20 and the qualitative data is analyzed using chi square test and the quantitative data is compared using the Bonferroni version of the ANOVA test.

**Results:** The most frequent blood group is B in this study. Overall, students with blood group AB scored the most with 23.08% of them scoring more than or equal to 120. On the other hand, students of blood group O scored the least, with only 14.81% of them scoring 120 or above. 20.51% of A group and 15.79% of B group scored 120 or more. There was no significant difference between blood groups and emotional intelligence.

The highest scores concerning self-awareness, Self-confidence and Self competency are in blood group AB ( $19.4615 \pm 2.79$ ,  $18.4615 \pm 2.99$ ,  $17.6154 \pm 2.63$  respectively) and p- values are 0.20, 0.15 and 0.94. Students who have A blood group scored higher in motivation and self-control ( $18.2308 \pm 3.56$  and  $18.4103 \pm 3.51$ ) and who have blood group B scored higher on empathy ( $18.7018 \pm 2.82$  and p- value was 0.99).

**Conclusion:** Subjects with blood group "AB" had a higher degree of emotional Quotient as compared to other blood groups. Blood group B is the most prevalent blood group in our study population.

**Key words:** Blood group; Emotional intelligence; Empathy; Integrity; Self-awareness; Self-development.

## INTRODUCTION

Intelligence refers to mental abilities that the individual owns and used them to solve problem and to get the cognitive, motion and emotional skills. Emotional intelligence, known as emotional quotient or EQ, is the ability to understand, use, and manage your own emotions in positive ways to relieve stress, communicate effectively, and empathize with others. It represents personal competence as well as social competence. Personal competence includes self-awareness and self-

management, whereas social competence is associated with the social awareness and social skills.<sup>1,2</sup> Emotional Intelligence (EI) measured as Emotional Quotient (EQ), has been determined in this study, by a standardized questionnaire by Emily A. Sterrett, which evaluates the six domains of Emotional Intelligence- Self Confidence, Self-awareness, Social competency, Empathy, Motivation and Self Control.<sup>3-5</sup> Assessment of EI is an important factor in determining students' adjustment and educational achievements. Lack of attention to this period of life can cause or intensify psychological disorders and lead to failure in social and educational performances.<sup>7</sup> Thus, an assessment of EI including empathy, self-awareness, motivation, self-confidence, self-control and social competency 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.<sup>6</sup> Human behavior to a great extent is the outcome of blood chemistry meaning thereby different constituents of the blood and their proportion regulates human behavior. A slight change in the blood chemistry deviates normal behavior of the man. Similarly, variation in blood chemistry varies between persons in blood group.

In Japan, it is a commonly held belief that a person's blood type is strongly correlated with their character traits. This belief is so prevalent that many Japanese organizations use blood type as a basis for managing their employees and conducting business dealings. Understanding human characteristics, behaviors, and mental health is crucial because it allows for the identification of effective steps that can be taken to improve interpersonal relationships and promote better mental health.<sup>7</sup>

Several studies have been conducted in the past individually on Emotional Intelligence, blood group and correlating them with the concept of EQ. But Daniel Goleman proposes that Emotional intelligence matters more than EQ.<sup>8</sup> In determining success in career, relationships, leadership etc. With professions that demand high emotional labor, Emotional Intelligence is of paramount importance. Especially in medical personnel in whom the ability to empathize with patients and good interpersonal skills undeniably adds to the performance in medical training and practice.<sup>9,5</sup>

Considering the above-mentioned facts, the study is aimed to assess the emotional intelligence and blood group in medical students at Private Medical College of Chittagong.

## MATERIALS AND METHODS

A cross section observational study is conducted on 163 male and female MBBS first year students of Chattagram Maa-O-Shishu Hospital Medical College and Southern Medical College, Chattogram. Students with any kind of behavioral diseases are excluded from the study by verbal questions. The study was approved from the Ethical Review Committee of Chattagram Maa-O-Shishu Hospital Medical College. Verbal and written informed consent were taken from the participants when approached.

We assessed participants' emotional intelligence using the Emotional Quotient Self-Assessment Checklist, which is a standardized questionnaire created by Emily A. Sterrett. Each participant received a questionnaire booklet, which included a consent form for their participation in the study and blood group was collected from their previous college admission record file.

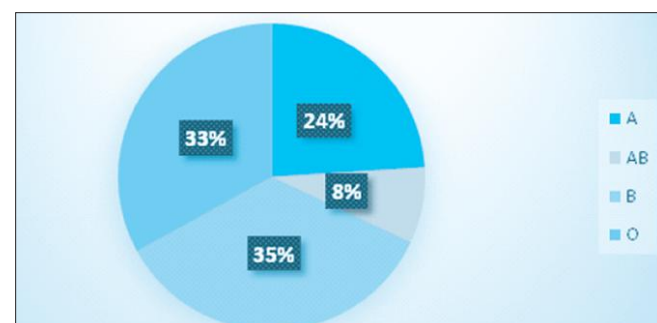
### The EQ Self-Assessment Checklist

It comprises 30 questions that evaluate emotional intelligence across six domains: self-confidence, self-awareness, social competency, empathy, motivation, and self-control. Each domain is assessed separately through five questions related to that specific domain. Participants were asked to rate each question on a five-point Likert scale. They were instructed to provide a rating that reflects their level of agreement with each statement. Total score of Emotional Quotient (EQ) was obtained after adding the scores of all the domains. Thus, for every domain – minimum score is 5 and the maximum is 25. The minimum total score is 30 and maximum is 150. The study subjects were divided into two categories based on their total EQ score more than 120 out of a maximum score of 150 (EQ>120), while Category B included those with a total EQ score less than 120 out of a maximum score of 150 (EQ<120). Then the responses were entered as data into the Statistical Package for Social Science (SPSS) version 20 and the qualitative data was analyzed using the chi square test and the quantitative data was compared using the Bonferroni version of the ANOVA test.

## RESULTS

Total EQ Scores of 163 subjects of 1<sup>st</sup> year medical students are calculated and categorized as mentioned above.

Figure 1 shows the percentage of distribution of different blood groups among the total study population. Here it depicts the most frequent blood group B (35%) followed by O (33%), A (24%) and the least one is AB blood group with (8%).



**Figure 1** Distribution of different blood groups among the study population.

Table I is designed to show the distribution of total emotional quotient scores in different groups in %. Here it reveals the blood group AB scores the most with 23.08% (>120 score) and Blood group O scores the least, with only 14.81% of them scoring 120 or above. 20.51% of A group and 15.79% of B group scores 120 or more. There are no significant differences among blood groups and emotional intelligence.

**Table I** Distribution of total emotional quotient scores in different blood groups (n = 163)

Blood Group	Total score $\geq 120$		Total score $< 120$		Total Number (n)	p-value
	Number (n)	Percentage	Number (n)	Percentage		
A	8	20.51%	31	79.49%	39	0.82
B	9	15.79%	48	84.21%	57	
AB	3	23.08%	10	76.92%	13	
O	8	14.81%	46	85.19%	54	
Total	28	17.18%	135	82.82%	163	

Table II shows the comparison of mean scores for Emotional quotient variables among the various blood groups. Where the highest scores concerning self-awareness, Self-confidence and Self competency are in blood group AB ( $19.46 \pm 2.79$ ,  $18.46 \pm 2.99$ ,  $17.61 \pm 2.63$ ) respectively and p- values are 0.20, 0.15 and 0.94. Students who have A blood group score higher in motivation and self-control ( $18.23 \pm 3.56$  and  $18.41 \pm 3.51$ ), p-values are 0.45, 0.57 and who have blood group B score higher on empathy ( $18.70 \pm 2.82$  and p- values are 0.99).

**Table II** Comparison of mean scores for Emotional quotient variables among the various blood groups

Scales of Emotional Quotient	Blood Group				p-Value
	A (39)	B (57)	AB (13)	O (54)	
Self-awareness	$18.7179 \pm 3.52$	$17.7544 \pm 3.07$	$19.4615 \pm 2.79$	$18.7037 \pm 2.59$	0.20
Empathy	$18.5897 \pm 2.92$	$18.7018 \pm 2.82$	$18.6154 \pm 3.04$	$18.5926 \pm 2.37$	0.99
Motivation	$18.2308 \pm 3.56$	$17.3509 \pm 2.59$	$18.1538 \pm 3.56$	$17.537 \pm 2.46$	0.45
Self confidence	$18.4359 \pm 3.21$	$17.2807 \pm 2.55$	$18.4615 \pm 2.99$	$17.537 \pm 2.46$	0.15
Self-control	$18.4103 \pm 3.51$	$17.6491 \pm 2.94$	$17.3077 \pm 3.09$	$17.5926 \pm 3.45$	0.57
Self-competency	$17.1282 \pm 3.25$	$17.1053 \pm 3.27$	$17.6154 \pm 2.63$	$17 \pm 3.07$	0.94

## DISCUSSION

The current study had been designated to govern the correlation between emotional intelligence and blood types among young healthy medical students. Emotional stability is a crucial aspect of mental well-being.<sup>10</sup> When individuals are emotionally stable, they tend to feel calmer and content in their lives. They are better equipped to navigate challenging situations and can approach problems with ease and confidence. For students, emotional stability can lead to greater satisfaction with their academic and personal lives. They are better equipped to manage stress and can focus on their goals with a clear and positive mindset. Multiple studies suggest that individuals with higher levels of emotional intelligence tend to be more committed to their organizations, exhibit better performance and achieve greater success, particularly among students.<sup>11,12</sup>

This study reveals that students with blood group “AB” had relatively higher degree of emotional Quotient as compared to other blood groups.

There is no sufficient review of literature that describes the relationship between blood group and EQ. An Indian study conducted by Tamanna Gupta revealed that students having blood group AB have relatively more EQ than other blood groups which are similar to present study. Similarly, according to Majid Tajik et al. iAB blood groupers are calm, coherent and considerate as linked to other blood varieties.<sup>13</sup>

Pro-social individuals are known for their tendency to engage in altruistically motivated behaviors.<sup>13</sup> Interestingly, our study found that students with blood type A displayed a higher level of motivation towards such behaviors when compared to individuals with other blood types. However, it is important to note that a study conducted in Karachi by Saif Ullah Shaikh showed results contradicting our findings. According to Shaikh's and Tamannagupta's study, students with blood type O negative and A were respectively found to be more self-driven and self-motivated compared to individuals with other blood types.<sup>14,2</sup>

Another similar result found in the study of Rida NG in Punjab, showed students of Blood group B are more empathized with highest mean score ( $14.4 \pm 2.9$ ) than other blood groups that supports the present study ( $18.7018 \pm 2.82$ ).<sup>15</sup>

The existing studies investigating the link between blood types and emotional intelligence suggest that the evidence for such an association is limited, inconsistent, and subject to debate. There is no sufficient review of literature that describes relationship between blood group and emotional intelligence. A previous study performed at Karachi revealed dissimilar results and reported that people with blood group A+ve were more empathetic than people with other blood groups.<sup>14</sup>

Blood group B was most frequent in our study, followed by O, A, and AB blood groups. Based on a recent study analyzing blood group frequency in Punjab's Faisalabad and Safdarabad cities reported by Jawed et al. our current findings receive partial support.<sup>16</sup> The study also found a dominance of B+ve, O+ve, and A+ve blood groups in Safdarabad, but a contrary predominance of the O blood group in Faisalabad, which differs from our results. Additionally, the AB group was found to be least prevalent in both cities, aligning with our reporting on the AB blood group. Other studies done by Rida NG in Punjab and an extensive review by Rehman Gur also supports this sequence of the distributions of blood groups i.e.  $B > O > A > AB$ .<sup>15,17</sup>

## LIMITATION

The limitation of our study was unequal number of blood group size (Very few AB blood group participants). This study was done only in a specific group (Medical students) of subjects in Chattogram Maa-O-Shishu Hospital Medical College and Southern Medical College, Chattogram.

**CONCLUSION**

One of the objectives of this study was to explore the relationship between blood groups and emotional intelligence. Among the student population, the most commonly occurring blood group is B. Students with blood group “AB” had relatively higher degree of emotional Quotient as compared to other blood groups. It indicates they are aware of their sentiments and their activities and students of blood group B are more empathized than other blood groups.

**RECOMMENDATION**

This study cannot be generalized as it was done in a local private medical college, Chattogram, in specific population (Medical students). More studies are required in different areas (Engineering, arts and science) with different study designs and large sample sizes to explore any association between EI and blood group.

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**DISCLOSURE**

All the authors declared no conflicting interest.

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