

A comparative study of Emotional Quotient with relation to Blood Groups among medical students of Punjab

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Abstract

Introduction: Emotional quotient (EQ) is the ability to monitor one's own and others' feelings and emotions for managing relations appropriately. It implies critical thinking and has a key role in augmenting coherence between the team members to work at their full potential for achieving their goals and success in life. There are numerous lines of evidence that shows the influence of blood groups on skills and abilities related to EQ. Individuals with blood group B are active and passionate but those with blood group A are intelligent, loyal to their work, and have maudlin behavior. People with the AB blood group are spiritual and O blood groupers have leadership character and least respond to stress. This study aims to compare the EQ-related skills and abilities among medical students with various blood groups.

Materials and Methods: A cross-sectional study was conducted at Aziz Fatimah medical and dental college, Faisalabad. Validate proforma consisting of questions related to demographic, blood groups, and Emotional intelligence scale (EIS) for EQ-related questions was constructed on google form and the link was shared among 600 MBBS students of different medical colleges in Punjab, Pakistan. Only 566 students filled out the complete proforma and fulfilled our inclusion criteria for enrollment in the study. Data were retrieved from the individual responses of Google Forms and transformed on SPSS 22 for data analysis. P values less \leq than 0.05 were considered significant.

Results: The most frequent blood group was B positive (B+ve) in this study. The highest score concerning self-awareness was in blood group A positive (A+ve) followed by O positive (O+ve) with a P-value=0.017. The highest score was observed in B+ve in the case of empathy but the difference in mean score was not statistically significant (p value= 0.326). Similarly, blood group A+ve showed the highest value in self-motivation, emotional stability, and managing relations with P-values of 0.036, 0.005, and 0.046 respectively. Participants with the A+ve blood group were more value-oriented, committed, showed integrity and altruistic behavior with P-value=0.032, 0.000, 0.013, and 0.032 respectively.

Conclusion: People with the blood group A+ve had the highest emotional quotient than other blood groups. Blood group B was the most prevalent blood group in our study population.

Keywords: Emotional Quotient, Self-awareness, empathy, self-motivation, emotional stability, managing relations, integrity, commitment, self-development.

Introduction

Emotional quotient is one of the vital elements of a successful life as well as psychological well-being because it shows how an individual applies knowledge and cope with themselves in different circumstances of life. Emotional Quotient (EQ) is the mean of capabilities possessed by a person to recognize feelings and emotions of one's own and of others around their-selves.¹ Various previous researchers perceived EQ as a mixed model of competencies, capabilities, and skills comprising self-awareness, empathy, self-motivation, emotional stability, managing interpersonal relations, integrity, commitment, and self-development.^{2,3} These qualities enable an individual to observe and control emotions, ensure self-confidence, enhance communication skills, formulate objectives, promote empathy, reframe and tackle issues, and make incredible decisions, which all make her or him a suitable candidate for leadership.^{2,3} People with high EQ have the ability to self-control and manage anger to achieve a range of adaptive outcomes like motivation and creative thinking.⁴ Moreover, by perceiving the feelings of others, they can appropriately manage their relations, especially with family and subordinates.⁴ Individuals with a high degree of EQ have the capability to resolve conflict effectively and respond to colleagues with empathy, thus having better leadership skills. Effective emotional understanding, interpersonal relationships, and management facilitate coherence among the team members that prove to be more productive and feel more valued.⁵ Effective leadership is enormously indispensable for the accomplishment of all related matters as well as human resources.² EQ is of great importance in all organizations particularly in the medical profession which thrives on doctor-patient interrelationships. Compassion and empathy have always been essential virtues for a doctor to improve interactions for effective clinical practice and better clinical outcomes.¹ Moreover, it has crucial importance for managing all the human relationships that happen as a part of the medical treatment process. EQ is imperative for the doctor for effective teamwork with paramedical staff, hospital management, and other allied health professionals for smooth handling of all patient-related matters.¹ There is a need to impart emotional quotient competencies and skills as a part of medical education in creating empathetic doctors for the future.¹

Previous researchers worked hard to probe the depths of all abilities and other skills related to the emotional quotient. Some researchers tried to link it with hereditary factors and while others related it with education and environmental factors. Although a consensus has not been reached and the actual link is still to be hypothesized.^{6,7} Very few studies suggested a link between this extraordinary ability with blood groups, one of the hereditary factors that are genetic and biological in origin. However, this link is still not well established.^{6,8}

Blood groups have always been a topic of interest for researchers of last decades as well as in this present era, not only in terms of scientific research but also due to the increase of popular curiosity. Blood groups are considered as most imperative traits which differ with the difference of people all around the world in different ethnic groups.⁷ It is believed by some researchers that there is a hereditary link between blood groups, EQ, behavior, and personality traits of individuals that significantly influence the personality, mental and social well-being, harmony, and temperament of the individuals.^{6,8} On the other hand, some researchers believe that there is no existence of scientific consensus on this relation.^{7,9}

People with blood group B are passionate, creative, and strong but are considered selfish, irresponsible, and unforgiving. They have a very strong drive to be the best at anything that they have set their mind to do. In contrast, People with blood group A are creative, sensible, responsible, and good at commitments, but they are not good at multitasking and seek amicability.⁷ They are good at commitments but are reserved, inclined to avoid confrontation and they feel uncomfortable toward others and don't want to hear them and so they lack leadership skills.⁶ Meanwhile, People with blood group AB do not have any negative perception and are called spirituals.¹⁰ Lastly, Persons with blood group O have strength, self-reliance, courage, and the pursuit of success. They are more flexible and appreciate the opinion of others. Furthermore, they have leadership skills, optimism, and the least bother to stress.^{6,10} Many genetic studies in Japan were done to evaluate the genetic link of ABO phenotype, genotype, and personality traits and reported significant differences in personality traits along various genotypes as well as phenotypes. However, not much work is done in the context of EQ-related abilities and skills.¹¹ In Japan, the EQ has also great importance and they believe that the blood groups can help understand the personality, behavior, and leadership skills of the individuals.¹¹

The management of interpersonal relationships and emotions is also important for academic as well as professional accomplishments. Based on the above-mentioned evidence, it is imperative that there is an effect of blood types on emotional quotient. Our aim of the study is to assess the emotional quotient of medical students who are future doctors and try to seek its link with blood groups. Secondly, we also aim to find out the most prevalent blood group in our study population. Our results help to open a new horizon for future research for highlighting the importance of EQ and understanding its role in a successful life.

Materials and Methods

A cross-sectional study was conducted at Aziz Fatimah Medical and dental college of Faisalabad from 28th July 2021 to 13th August 2021, after taking ethical approval from the institutional ethical committee (Ref. no IEC/126-21). A structured questionnaire was constructed on the google form. The first section comprised consent and a history of known psychological (depression, anxiety) and behavioral disorders along with appropriate instructions for participants. Medical students who were willing to participate and had no psychological issues were asked to proceed further. The second section of the google form comprised demographic-related questions including age, gender, and blood groups. The third and last section was related to EQ. For the assessment of EQ, we used the Emotional intelligence scale (EIS) that was widely used before by many previous researchers with a calculated reliability index of 0.936 which reflects the high validity of this scale. EIS was constructed by Anukool Hyde; Sanjyot; Upindar Dhar, and contains 34 questions in 10 domains including Self-awareness, empathy, self-motivation, emotional stability, managing relations, integrity, commitment, and self-development. EIS was a five-point Likert scale ranging from 5 to 1 point assigned for five responses strongly agree, agree, neutral, disagree, and strongly disagree respectively, for all 34 questions.⁸ We transformed this already widely used questionnaire by previous researchers on our google form to evaluate the EQ of participants.

The link to the google form was shared among 600 male and female medical students of the first year to final years MBBS of various medical colleges of Punjab. However, only 566 medical students submitted complete responses and were included in the study, and the rest were excluded. The subjects

who gave a history of psychological issues were also excluded.

Data were retrieved from the individual responses of Google Forms on excel and transformed on SPSS 22 for analysis. Continuous variables like age and scores for EQ-related variables were presented as mean \pm SD. Categorical variables like gender and blood groups were presented as frequencies and percentages. Mean scores related to EQ variables were compared by chi-square test among the subjects with various blood groups.

Results

In this study, a link was shared among the 600 MBBS students but only 566(94.33%) complete responses were received. Of the total respondents, 418(73.7%) were females and only 148(26.1%) were males. The mean \pm age of the participants was 20.99 \pm 2.00. The distribution of respondents according to academic years is shown in Figure 1.

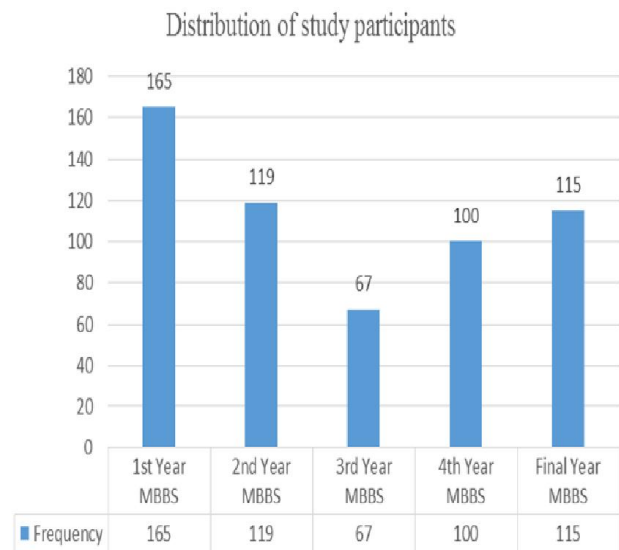


Figure 1: Frequencies of medical students according to their academic year (n=566) 7

It is showing that the majority of the participants were from the first year followed by students of 2nd year, 4th year, final year, and third-year MBBS students respectively. Blood group B+ve was the most prevalent blood group followed by O+ve, A+ve, and AB-positive (AB+ve) blood groups. The least common blood group was AB negative(AB-ve) among our study population. (Figure 2)

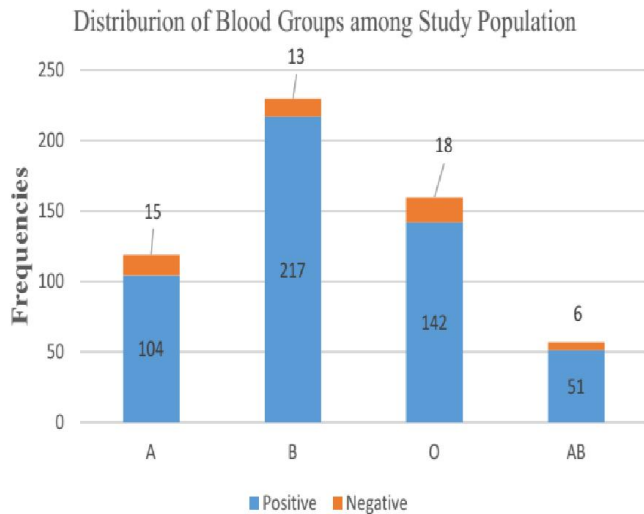


Figure 2: Frequencies of Blood Groups of Medical Students (n=566)

Blood group A+ve has the highest scores in the majority of the variables for emotional quotient and seems more emotionally quotient as compared to other groups. Blood group AB-ve achieved the lowest scores in the majority of EQ levels. The highest scores concerning self-awareness were noticed in blood group A+ve followed by O+ve and least score was found in AB-ve participants, the difference was statistically significant (p-value =0.017). In empathy,

the highest scores were observed in blood group B+ve followed by O+ve, and again least score was seen in participants with blood group AB-ve, but the difference in mean scores was not statistically significant.

Blood group AB+ve followed by B+ve achieved the highest score concerning self-motivation and least score was found in the AB-ve blood group, the mean difference was statistically significant with a p-value of 0.036. Students with blood group A+ve followed by B+ve got higher scores in emotional stability with a significant p-value of 0.005. For managing relations, again blood group A+ve was on the top with the highest scores followed by O+ve participants and as usual AB-ve blood group was on the lower side, this difference was also significant with a p-value of 0.046. Similarly, participants with blood group A+ve were more value-oriented as compared to other blood groups and AB-ve subjects were the least value oriented with a significant p-value of 0.032. Concerning fulfilling commitments, the A+ve blood group again achieved a higher score followed by blood group O+ve with a significant difference with p-value = 0.00. Integrity and altruistic behavior were also noticed in A+ve blood group subjects and least score was noticed in AB-ve subjects with statistically sound differences with p values 0.013 and 0.032 respectively. (Table 1)

Table 1: Comparison of Scores for Emotional Quotient Variables among the Various Blood Groups (n=566)

Emotional Intelligence	Blood Groups								P-value
	A+ve (n=104)	A-ve (n=15)	B+ve (n=217)	B-ve (n=13)	AB+ve (n=51)	AB-ve (n=6)	O+ve (n=142)	O-ve (n=18)	
Self-awareness	16.9 ± 10.4	15.9 ± 2.99	15.2 ± 3.4	15.1 ± 3.4	15.1 ± 3.3	9.2 ± 6.85	15.3 ± 2.9	15.5 ± 2.36	0.017
Empathy	13.9 ± 2.8	13.8 ± 2.3	14.4 ± 2.9	14.0 ± 2.77	14.3 ± 2.6	12.5 ± 2.34	14.16 ± 2.3	13.6 ± 2.5	0.36
Self-Motivation	22.1 ± 3.6	21.1 ± 3.42	21.9 ± 4.2	21.4 ± 5.3	23.08 ± 3.5	20.7 ± 2.7	21.1 ± 4.0	21.7 ± 3.7	0.036
Emotional stability	14.8 ± 2.9	14.7 ± 2.38	14.6 ± 3.04	14.6 ± 3.8	13.6 ± 2.98	13.5 ± 4.32	14.0 ± 2.76	13.4 ± 2.6	0.005
Managing relations	15.5 ± 3.2	15.6 ± 3.04	14.4 ± 3.48	13.7 ± 4.7	14.76 ± 3.13	12.5 ± 4.37	14.75 ± 3.1	15.3 ± 3.4	0.46
Self-development	7.6 ± 1.5	6.9 ± 1.62	7.6 ± 1.7	7.7 ± 2.1	7.47 ± 1.4	5.5 ± 1.87	7.4 ± 1.5	6.67 ± 1.6	0.22
Value Orientation	9.0 ± 9.1	7.3 ± 1.8	8.1 ± 1.67	8.0 ± 1.58	7.1 ± 2.08	5.3 ± 2.5	7.9 ± 1.5	7.78 ± 1.7	0.032
Commitment	7.99 ± 1.65	7.8 ± 2.1	7.6 ± 1.85	7.77 ± 1.59	7.1 ± 2.13	5.3 ± 2.4	7.63 ± 1.53	7.8 ± 1.25	0.000
Integrity	13.2 ± 3.2	11.5 ± 2.9	12.3 ± 2.35	12.1 ± 2.7	12.3 ± 2.0	11.0 ± 4.15	11.98 ± 2.4	12.1 ± 1.53	0.013
Altruistic Behavior	7.28 ± 1.4	7.1 ± 1.46	7.7 ± 1.78	7.46 ± 2.3	6.9 ± 2.0	6.67 ± 1.97	7.2 ± 3.6	6.78 ± 1.97	0.032

Discussion

Emotional Quotient is paramount for effective leadership and teamwork for accomplishing goals and success in life. It is a burning topic all across the world in past decades because it differentiates high performers from low performers.¹² The study of EQ has become a topic of considerable interest in recent research to explore its relation with various factors. This study was conducted to highlight the relationship between Emotional Quotient (EQ) with blood groups in MBBS students from 1st year to the final year. Emotional quotient plays a significant role in performing at its fullest potential to meet the challenges for achieving goals.¹³ Empathy, self-control, and creative thinking are essential for academic as well as professional achievements.^{14,15} Overall results of the current study showed that the students with blood group A+ve have a higher degree of EQ as compared to other blood groups. In contrast to our results, a study conducted in Karachi reported higher EQ in subjects with blood group O+ve and O negative(O-ve) as compared to other groups.⁸

Self-awareness is the key component of EQ and the main determinant of self-control. This is referred to as being aware of various aspects of ourselves including character, behavior, and feelings. This ability drives individuals to self-evaluation, and to judge the appropriateness of their thoughts and behaviors, which determine individuals making the right choices for achievements.^{12,16} Results of the current study showed that students with blood group A+ve were well aware of their sentiments and their activities. They are able to control their emotions and responses to various situations and other people's behavior. These students got higher scores concerning self-awareness than other blood groups. Blood group O+ve was the second most pervasive blood group related to self-awareness. Contrary to our result, the Gupta T. study conducted in India did not find any difference related to self-awareness among the participants with various blood groups.¹⁷

Empathy helps people to understand their feeling and maintain relations with other individuals around them. This element prevailed in students with blood group B+ve followed again by O+ve and least shown by the students with blood group AB-ve. 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.⁸ In contrast to current results, an Indian study

showed that students with blood group AB+ve were most empathetic.¹⁷

Self-motivation is an internal force that drives me to keep moving forward. It refers to the capability to set goals and always be ready for the arduous task.¹⁸ In the current study, people with blood group AB+ve were more self-motivated and got the highest scores. Contrary to this,¹⁹ a study conducted in Iran reported a lack of self-motivation in subjects with blood group AB.¹⁹

Emotional stability enables the person to develop an integrated and balanced way of perceiving the problems of life. Our study showed that A+ve blood groupers are more emotionally stable as compared to other blood groups. Blood groups B and O got almost equal scores and then comes blood group A+ve. Whereas, blood group AB+ve, as well as -ve, were least emotionally stable in our study population. Emotionally stable students have the capacity to maintain their emotional balance under stressful circumstances and such students are calm and happy. Dissimilar results were reported by an Indian study conducted by Gupta which revealed that students with blood group AB+ve are more emotionally stable than others.¹⁷ Our findings, concerning less emotional stability in blood group AB subjects were in compliance with the Tajik et al. study which also showed that AB blood groupers were emotionally unstable.¹⁹ Another study in a college in Pakistan showed no significant relationship between emotional stability with blood groups. In the same study, O-ve people were the most motivated ones.⁸

Managing relations means building strong interpersonal relationships to resolve conflicts and promote teamwork.¹⁷ It is an important element of the Emotional quotient. This study revealed that blood group A+ve can manage and continue relations well.

Self-development is the process by which a person's character or abilities are gradually developed. Concerning the self-development, all blood groups achieved almost equal scores and there was no significant difference among all blood groups. Our results were in agreement with the Indian study which also did not find any significant difference among the scores.¹⁷

Commitment is the state or quality of being dedicated to a cause or activity.¹⁷ Concerning fulfilling commitments, the A+ve blood group again achieved a higher score followed by blood group O+ve among our study population. Our results are justified by previous studies stating that Blood group A individuals are good at fulfilling their commitments.⁷

Our results are not in line with previous studies reporting no difference in terms of commitments among the various blood groups.¹⁷ However, the results of Sheikh et al. indicated that the AB+ve achieved the highest scores for commitments but the difference was not statistically different.⁸

Another key element of EQ is altruistically motivated behavior.²⁰ Altruistic behavior helps the individual to recognize the well-being of others and augment human sharing. Such individuals support their fellows without expecting self-gain and they want to work for the welfare of others at any cost. According to our study results, altruistic behavior was highly cherished among blood group A+ve individuals. Similarly, integrity also prevailed in the same blood group. Integrity is the practice of being honest and showing a consistent and uncompromising adherence to strong moral and ethical principles and values.¹⁷ Inconsistent results have been documented by a previous study performed in Karachi documenting more altruistic behavior in blood group O+ve subjects in contrast to other blood groups.⁸

This study revealed that students with blood group A+ve were more value-oriented. In contrast to our results, a previous study documented that students who have 'B+ve' were higher on value orientation.¹⁷ According to a study by Shaikh et al, all the blood groups did not differ significantly in value orientation.⁸

Blood group B+ve was most frequent in our study, followed by O+ve, A, and AB+ve blood groups. The least common blood group was AB-ve among our study population. Similar trends of blood group distribution among people of Faisalabad were reported by Jawed et al. study.²¹ Study reported from district Karak KPK, Pakistan was also in favour of current results and reported the same distribution of blood group.²² Current findings are partially supported by the recent study analyzing the frequency of blood groups in the Faisalabad and Safdarabad cities of Punjab. Similar to our results, this study showed the dominance of B+ve, O+ve, A+ve blood groups in Safdarabad, and contrary to our results predominance of the O blood group was reported in Faisalabad. The AB group was least prevalent in both cities, these findings of the above-mentioned study were in favour of our reporting concerning the AB blood group.²³

Our findings concerning trends of blood group distribution are confirmed by an extensive systemic review by Rehman GU²⁴, who analyzed six regions of Pakistan, including four provinces and two

autonomous territories of the state, including the reported studies in his systemic review from 1999 to 2020, covering a population of all over Pakistan reported the same sequence of the distributions of blood groups in most of the cities of Pakistan i.e B> O> A > AB. On analyzing the province-wise distribution the various studies showed that blood group B is most prevalent in Punjab, Gilgit, Kashmir, and Khyber Pakhtunkhwa province. However, blood group O was prevalent in Sindh and Balochistan.

A similar trend of blood group distribution "B>O>A>AB" in Northern Pakistan was also reported by a large-scale study conducted at the Armed Forces Institute of Transfusion (AFIT) Rawalpindi.²⁵ B group is also common all over Asia as documented by previous studies.²² Our results are justified by the recent genetic research conducted in Tamil Nadu, India analyzing the relation of the ABO blood group with BMI and finger-printing, reported the predominance of the genotype of blood group "B" followed by the genotype of "O" and A, and AB was the rare genotype among their study population.²⁶ In contrast to this, Japanese races are characterized by relatively high blood group A and B blood group was least common in them.¹¹

The role of genetic makeup in a variation of blood groups in different ethnicities and regions of the world is suggested by numerous previous studies.^{22,26} Some Pakistani researchers also suggested that the variation in the distribution ABO and Rh blood groups among the Pakistani population is due to genetic, diverse racial, and ethnic variations among the Pakistani population.²⁴

We found differences in most of the components of EQ among the various blood groups. However, we did not find sufficient literature to compare our results and strengthen our discussion. For validation of our results, we recommend future genetic research on a broader scale to explore the mechanistic link for the relation between EQ and blood groups.

Limitation

This study was conducted in the different medical colleges of large cities including Lahore, Faisalabad, and Rawalpindi. So, we can generalize our results to the whole population. For generalization of the results, a study with a large sample size involving the other cities of Punjab is recommended to validate the association of E.Q with blood groups.

Conclusion

Subjects with blood group "A+ve" have a higher degree of emotional Quotient as compared to other blood groups. Blood group B was the most prevalent blood group in our study population.

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