ORIGINAL ARTICLE

Emotional Intelligence may have Association with Blood Groups

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ABSTRACT

Background: Emotional intelligence (EI) can be described by means of capabilities possessed by a person to recognize feeling, and to manage emotions. For instance, active types of blood are O and B i.e. they are (belligerent and developing) On the other hand blood types A and AB are submissive i.e. (unchanging and unprogressive). The study aimed to find out the association between emotional intelligence and blood groups.

Methods: A cross sectional study was carried out on 184 male and female students of a private university, Karachi. Blood group of these subjects was determined by using hematological and aseptic techniques and samples were collected through finger prick method acknowledged by the students. Results were recorded by applying the Fisher's exact test and one way ANOVA to see the significance.

Results: Self-awareness having highest mean score in O- group 17.00 ± 1.00 with p-value of 0.011. In empathy blood group A+20.20 ± 3.22 and O- 20.00 ± 1.73 achieved highest mean values with p-value of 0.000, self-motivation level also got highest mean score in O- group 23.67 ± 3.51 with p-value of 0.035, managing relations level was highest observed in O- group 17.00 ± 1.73 with p-value of 0.001. In addition, altruistic behavior found positive in O- blood group 8.67 ± 0.58 with significant p-value of 0.000 among all students.

Conclusion: Blood groups were identified significantly with different emotional intelligence level. The students having blood group O found to be more emotionally intelligent. However, large-scale studies are required in different parts of the world to explore the new aspects.

Keywords: Emotions; Empathy; Intelligence.

INTRODUCTION

One of the most significant differences among population around the world is Blood typing. Human blood has been categorized into four types, A, B, AB, O based on two antigens A and B present on red blood cells, and the two related antibodies of Anti- A and Anti- B present in plasma. The hereditary nature of blood group is well identified. This helps in recognizing many human characteristics such as the personality traits[1].

There is widespread belief in Japan that blood type is strongly related with character and numerous Japanese organizations necessitate blood groups as the base for management and other business dealings[2]. The identification of human characteristics, behavioral factors and the mental health is a necessity, since once they are identified, effective steps can be taken to improve the relationship between an individual and others and consider ways to improve mental health[1].

Emotional intelligence is the person's aptitude to distinguish feeling and manage emotions[3]. In other words, it is accepting personnel feelings; understand feelings of others and the regulation of emotion in a way that enhance living.

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Emotional intelligence represents personal competences as well as social competence. Personal competence is associated with self-awareness and self-management, whereas Social competence is associated with the social awareness and social skills[4]. It is mentioned in studies that blood groups are one of the chief determinants of temperament such as blood groups B and O found to be active (positive, aggressive, progressive), similarly, a bulk of individuals with blood type O have features such as being enthusiastic, strong-willed and sociable. Whereas subjects with Blood group B are confident, frank, light-hearted, friendly, fast and considerate. On the other hand, groups AB and A are passive (negative, conservative, defensive). Similarly, Blood group A is miserable, shy, submissive, hesitant and susceptible. In contrary to the above, some studies showed no relationship between blood group and emotional intelligence[5]. There is a conflict regarding association of EI with blood group in different studies, therefore this study was conducted to explore the relation between EI and blood group in our part of the world. The purpose of the study was to determine the association between blood groups (A, B, AB and O) and emotional intelligence.

METHODS

A cross sectional study was conducted on 184 male and female (MBBS and DPT) first year students of a private medical university, Karachi. Students with any kind of behavioral diseases were excluded from the study. The study was approved (Ref. no ERC 08/2019) from Ethical Review Committee of Bahria University Medical and Dental College. Permission from institutional head was acquired to conduct the research. Verbal and written informed consent was taken from the participants when approached.

Blood groups of these subjects were determined by using hematological and aseptic techniques. Confirmation was done during the blood grouping practical classes. Collection of blood samples was done through finger prick method and for the ABO blood groups; the open slide method was used. Red blood cells suspended in 0.9% saline were treated with anti- A, anti- B and anti-D antisera on glass slides and mixed with distinct applicator sticks. The resulting fusion was observed for clumping with parallel antisera and was linked with control for confirmation. Uncertainty was clarified with focusing the slide under microscope. The subjects filled a questionnaire about their demographic status, BMI and different variables of emotional intelligence (Self-awareness, compassion, self-motivation, emotional stability, managing relations, honesty, self-development, value orientation, commitment and unselfish behavior). The tool used for this study was tool 1 Emotional intelligence scale (EIS) by Anukool Hyde; Sanjyot; Upindar Dhār[6]. This was a 34-item scale with ten dimensions of EI.

It was defined as a 5 point Likert scale ranging from 5 (strongly agree) to 1 (strongly disagree) used in all 34 questions of the questionnaire. A manual for EIS provided by the authors along with the scoring table and appropriate instructions makes it easier to administer the questionnaire on single persons as well as the groups. It was evident from the assessments of experts that items of the scale were directly related to the concept of EI. In order to find out the validity, the reliability index was calculated which indicated a high validity, the index being 0.93[6]. Data Analysis was done using Statistical Package for social sciences (SPSS) version 23.0. Results were recorded by applying the Fisher's exact test and one way ANOVA to see the significance. Post HOC Duncan Test was also performed and p-value <0.05 considered to be statistically significant.

RESULTS

A total of 184 students were selected in this study. These samples were divided into two groups MBBS (n=106) and DPT (n=78). Mean age of MBBS students were19.44±0.95 and DPT students were 19.74±0.90. There were 127 female and 57 male respondents. Body Mass Index (BMI) of maximum students 98 (53.3%) were fall within the group of 18.5-22.9 Kg/m^2 (within healthy range) whereas, only 17 (9.2%) found with ≥27 Kg/m^2 (all above healthy range).

Mean of emotional intelligence scale score was compared in students of different blood groups. Statistically significant relations were found with different emotional intelligence level. Self-awareness having highest mean score in O-group 17.00±1.00 with p-value of 0.011. In empathy blood group A+20.20±3.22 and O- 20.00±1.73 achieved highest mean values with p-value of 0.000, self-motivation level also got highest mean score in O- group 23.67±3.51with p-value of 0.035, managing relations level was highest observed in O- group 17.00±1.73. With p-value of 0.001, integrity was highest recorded in O- 13.67±0.58 with p-value of 0.000. In addition, Altruistic behavior found positive in O- blood group 8.67±0.58 with significant p-value of 0.000 among all students (Table 1) (Figure 1).

Table 1: Emotional intelligence scores achieved students of different blood group.

Emotional Intelligence	Blood Group								P-Value
	A- (n=5)	A+ (n=35)	AB- (n=3)	AB+ (n=22)	B- (n=16)	B+ (n=57)	O- (n=3)	O+ (n=43)	
Self-Awareness	16.2±2.95	16.7±2.03	11.0±1.73	15.9±2.97	16.2±2.52	16.1±2.24	17.0±1.0	16.6±2.07	0.011
Empathy	19.2±3.11	20.2±3.2	15.0±0.0	19.2±2.59	16.2±4.78	19.8±2.35	20.0±1.73	19.2±2.24	0.000
Self-Motivation	21.0±7.31	22.8±3.67	17.3±5.77	22.73	22.63	23.58	23.67	21.86	0.035
Emotional Stability	14.0±3.32	16.11±2.45	14.00±0.0	15.91±2.64	152±.78	15.72±2.27	16.0±2.0	15.4±2.73	0.496
Managing Relations	14.6±2.51	15.57±2.86	10.0±3.46	16.73±2.45	14.5±3.58	15.86±2.11	17.0±1.73	16.14±2.29	0.001
Integrity	12.4±1.67	12.77±1.72	6.67±2.89	12.23±2.20	12.63±1.26	12.63±1.63	13.67±0.58	12.65±1.74	0.000
Self-Development	7.4±2.41	7.43±1.75	8.33±0.58	8.5±1.30	7.75±1.61	8.28±1.35	8.33±1.15	7.86±1.57	0.147
Value Orientation	8.4±1.34	8.29±1.25	8.33±0.58	7.64±1.79	8.75±1.34	8.19±1.54	9.33±1.15	8.07±1.42	0.345
Commitment	8.2±1.30	7.89±1.66	7.0±1.73	8.45±1.18	8.13±0.81	8.35±1.63	9.0±0.0	8.42±1.42	0.486
Altruistic Behavior	7.2±1.79	7.94±1.49	4.0±1.36	8.41±1.26	8.0±0.89	8.25±1.30	8.67±0.58	7.67±1.54	0.000

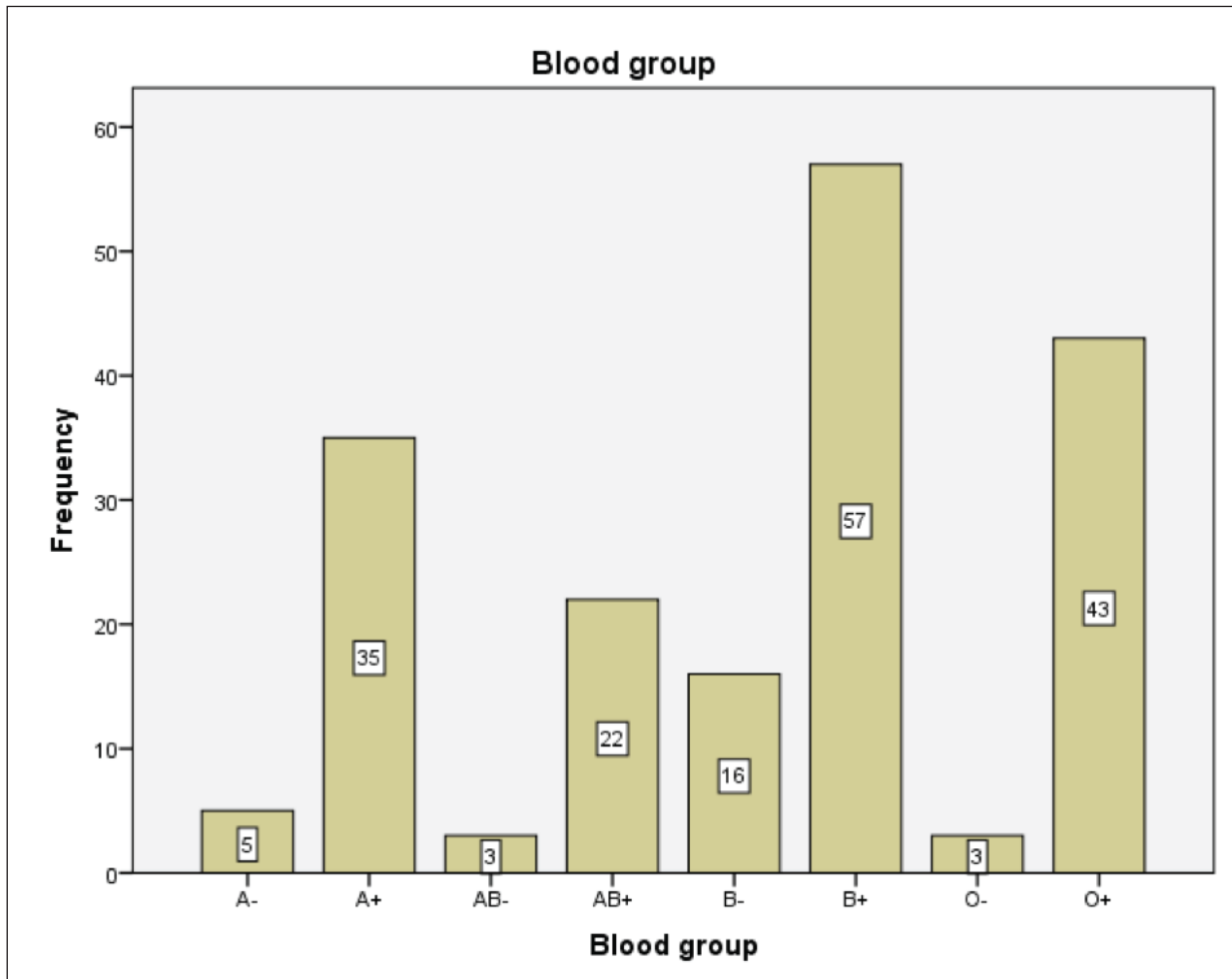**Figure 1: Blood groups and the number of participants in the study.**

Table 2: BMI in relationship with Blood group of students.

BMI/ Blood Group	< 18.5 (n= 42)		18.5 - 22.9 (n=98)		23 - 26.9 (n=27)		>=27 (n=17)		p - Value
	N	%	N	%	N	%	N	%	
A -	2	4.8%	2	2.0%	0	0.0%	1	5.9%	
A+	10	23.8%	15	15.3%	6	22.2%	4	23.5%	
AB -	0	0.0%	0	0.0%	3	11.1%	0	0.0%	
AB+	3	7.1%	18	18.4%	1	3.7%	0	0.0%	0.038
B -	4	9.5%	8	8.2%	2	7.4%	2	11.8%	
B+	13	31.0%	30	30.6%	10	37.0%	4	23.5%	
O -	0	0.0%	3	3.1%	0	0.0%	0	0.0%	
O+	10	23.8%	22	22.4%	5	18.5%	6	35.3%	

Body Mass Index (BMI) was also compared with different blood group of students. It was seen that maximum students of < 18.5 group was 13 with B+ blood group. In the category of 18.5-22.9 there were 18 students with AB+ blood group. In the group of 23-26.9 there were 10 students found with B+ blood group whereas in ≥ 27 group maximum students 6 found with O+ blood group. In combination there was statistically significant results p-value= 0.038 found in all the BMI categories with blood groups (Table 2).

DISCUSSION

The current study had been designated to govern the association between emotional intelligence and blood types among young healthy MBBS and DPT students. It is indicated in several studies that height of emotional intelligence increases commitment to organizations[7], raises performance level[8] and achievement of success amongst students. Many researchers claimed that EI and organizational commitment are significantly linked with each other[9]. Studies in the past demonstrated provision of channel by emotional intelligence resulting in educational amendments, also achieving and reaching its complete prospective across primary, secondary and tertiary levels of schooling[10]. The present study showed (Table 1) that students with O-ve blood group in comparison with other blood groups, a self-driven (p-value 0.035*).

One of the imperative indicators of mental health is Emotional stability[11]. Emotionally stable students are calm and happy, satisfied with their life and they deal with the situations in perfect way to solve their problems easily. This study could not find any positive association between emotional stability and blood group (p-value 0.496*) whereas, Gupta revealed that students having AB+ blood groups are more emotionally stable than other blood groups[4].

The existing study also revealed that students having blood group A +ve are more empathic than students with other blood groups are. Whereas, an Indian study showed that, the students having AB +ve blood group are more empathic[4]. Similarly, according to Majid Tajik et al. in 2016, AB blood groupers are calm, coherent and considerate as linked to other blood varieties[12]. This study also found that students having blood group AB+ve were stronger in managing relations than other students as compared to other blood groups (p value 000.1). A key characteristic of the pro-social personality is the desire to perform altruistically motivated behaviors[13]. Our study showed that students having blood group O negative have motivated behaviors as compared to other blood types. The term altruistic behavior is the pattern of belief where an individual recognizes the well-being of the others as equal to the well-being of one self. Hence, the individual strives to support his/her fellow being without any self-gain of recognition, popularity or monetary gain. Example, a philanthropist such as Abdul Sattar Edhi throughout his life had an altruistic behavior for the better good of humanity.

Current study might not find any positive association between blood groups and self-development, emotional stability, value orientation and commitment). Evidence from available studies appeal association between blood types and emotional intelligence and depicts that this association is scanty, conflicting and controversial. There is no sufficient review of literature that describes relationship between blood group and emotional intelligence[4].

B+ve blood group was found most frequently in this study, whereas, in Egypt the blood group that is most found is O[14,15]. Russia has blood group A in majority[16]. O and A are the commonest blood groups found amongst Australians, the Indians in contrast have B group as the most prevalent[17]. This reveals that the entailment for blood group estimation along with gene frequency studies is versatile on one hand. On the other hand, serve to be a source of worthy statistics on the genetic resemblance among different populations and to a lesser level their genetic association among their progeny, in spite of the diversity in the customs and religious beliefs among populations[18].

Body mass index has been established as a fitness-marker, cut off points of which are predictors of mortality and morbidity in populations of various cultures and ethnicity[19] the relationship between BMI and blood groups should be accessed[20,21] as it carries importance, they have separately been considered as predisposing factors diseases. Some studies[22] have been carried out to assess the positive or negative impact of a particular antigen to an increased BMI. Nevertheless, various epilogues have been reached by these studies that whether ABO status associates or does not associate with BMI. Blood group O+ve students (35.3%) come under the criteria of obesity according to the Asian BMI classification in the present study. In contrast, another study conducted in Saudi Arabia revealed that the obesity was more common among the students belonging B blood group followed by blood group O, A and AB. This could suggest that blood group B might be genetically more prone to obese as compared to other groups[23].

In this study, most prevalent group in students of Pakistan was B positive whereas blood group O positive and O negative achieved highest scores on emotional intelligence. The world O-negative blood types population was found to be 2.55% where as in Pakistan; this percentage is found to be 2.17% respectively[24].

CONCLUSION

The association between blood groups and emotional intelligence was displayed under the objectives of this study. The most frequent blood group found among students was B positive. The students having blood group O found to be more emotionally intelligent. This study cannot be generalized as it was done in a local private medical college, Karachi in specific population (medical students). More studies

are required in different areas with different study designs and large sample size to explore any association between EI and blood group.

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CONFLICT OF INTEREST

There is no conflict of interest among the authors to declare.

ETHICS APPROVAL

The study was approved (Ref. no ERC 08/2019) from Ethical Review Committee of Bahria University Medical and Dental College. Permission from institutional head was acquired to conduct the research. Verbal and written informed consent was taken from the participants when approached.

PATIENTS CONSENT

Informed Consent was taken from all MBBS and DPT (Doctor of Physical therapy) students in the beginning of the study after explaining the whole procedure and objective of the study.

AUTHORS' CONTRIBUTION

SS took part in conception, compilation of write up, work on discussion, references and revising it critically for important intellectual content. SM was involved in data collection, article write up, designing methodology and critical thinking. MFF took part in statistical analysis, interpretation of data and write up of results.

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