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## The Relationship between Iranian Undergraduate Learners' Blood Type and Their Personality

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### Abstract

The main aim behind the current study was to investigate the relationship between blood and personality type in undergraduate students of Shahid Madani. The idea that personality differences are related to biological characteristics like blood type is conflicting. The present study evaluated hypotheses that personality characteristic based on the Five-Factor Model (NEO-PI) differ on blood type. 140 Iranian university students completed five subscales of NEO personality inventory. Analysis using multivariate analysis of variance (Wilks' Lambda) for unrelated measures revealed a significant effect of the manipulation blood type at an alpha of .01, Wilks' Lambda = .52,  $F(5, 115) = 4.72$ ,  $p = .001$ . This means that Conscientiousness and Openness are significant in blood type. The lower than O+, in

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Conscientiousness and A+ is higher than B+, B+ lower than AB+ and O-. A measure of effect size,  $\eta^2 = .17$ , indicated a relatively large effect.

**Key words:** blood type, personality, NEO

## 1. Introduction

The Big Five model of personality has steadily emerged over the past twenty-five years as a comprehensive taxonomy of individual differences in human personality (John, & Srivastava, 1999). And thus it provides a standard framework within which many other specific personality constructs can be better understood (Boland & Cappeliez, 1997). The five-factor model (FFM) or Big Five is a widely researched model of personality trait structure (John, Naumann & Soto, 2008).

According to the Five-Factor Model of Personality (FFM), most human personality differences can be summarized in five dimensions as follows: Extraversion, Neuroticism, Conscientiousness, Agreeableness, and Openness to experience. An impressive body of empirical work has demonstrated the usefulness and scope of the FFM, as it can be used to organize a large variety of personality psychological constructs (including abnormal personality; Markon, Krueger & Watson, 2005). The Five-Factor Model dimensions are related to a variety of important life outcomes (Ozer, & Benet-Martinez, 2006). For example, high conscientiousness predicts good work performance and good health while low agreeableness and high neuroticism are associated with poor health; high agreeableness is related to helping others; high extraversion predicts leadership; high neuroticism is associated with depression; and high openness is related to creativity. According to Malouff, Thorsteinsson & Schutte (2005), the lack-of-self-control cluster of high neuroticism, low agreeableness and low conscientiousness has been found to be associated with various types of psychopathology including alcohol involvement (Malouff, Thorsteinsson, Rooke, & Schutte, 2007) and smoking (Malouff, Thorsteinsson, Rooke, & Schutte, 2006).

The idea that personality differences are related to biological characteristics like blood type is not new but because of complex interactions, classifying which genes are involved or the extent of their involvement in determining a human trait the exact is difficult though Studies have shown that approximately 40% of the variation in personality can be explained by genes (Jang, Livesley & Vernon 1996). However, blood type is genetically predetermined and can be easily identified. Popular books have been supplemented by scientific studies on a possible connection between blood type and personality in normal populations. (E.g. Constantine, 1997; D'Adamo & Whitney, 2001; Nomi & Beshar, 1983). And blood type used as a biological marker to assess the influence of genetic factors on personality in Australia

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(Rogers & Glendon, 2003), Canada (Cramer&Imaike,2002), Greece (Rinieris, Christodoulou, & Stefanis,1980), Italy (Cattell, Boutourline & Hundleby,1964) and the United States (Lester& Gatto, 1987).

Medical science has investigated the relationship between blood group and different diseases, while clinical studies have identified associations between blood type and psychological disorders. For the first time in 1930, Furukawa observed that participants with certain temperamental characteristics seemed to have a specific blood type, and then concluded that temperament and blood type were correlated (Furukawa, 1930). With the development of tools assess personality traits, such as the Eysenck Personality Inventory (Eysenck & Eysenck, 1964), and the Sixteen Personality Factors Inventory (Cattell, Eber& Tatsuoka, 1970), psychologists have studied personality characteristics extensively in relation to blood types. Using the 16 PF, Cattell, found some significant relationships between blood type and personality among 323 Australian residents, although with only 12 ABs in the sample. Blood Type A was significantly lower than Type O on self-sentient integration, but not compared with other blood types (Cattell,Brackenridge, Case, Propert, and Sheehy 1980). Eysenck (1982) reviewed studies in over 20 countries and suggested that the level of neuroticism in a country seemed to vary consistently with the proportion of persons in that country who had Type B blood. (He also suggested that Type AB was related to Psychoticism).

Research evaluating the relation between personality and blood type has yielded mixed results. A number of researchers proposed personality and blood type were correlated in contrast found no relationship between blood type and personality (Thompson, 1936). Gupta (1990) observed that Neuroticism scores were significantly higher for participants with Type B blood. Maurer-Groeli (1974) found that blood Type as were more emotionally vulnerable and that blood Type AB were more aggressive, open and extraverted than were individuals with other blood types. Individuals with Type O or AB had significantly higher Extraversion scores than those with Type A or Type B did (Lester & Gatto, 1987). Gupta, (1990), Marutham & Prakash, (1990) reported no significant difference on Extraversion scores among A, B or O blood types.

## **2. Methods**

### Participants, measure, and procedure

There were 75 male and 45 female undergraduate students at the University of Shahidmadani who completed the study for partial course credit. After giving informed

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consent, participants indicated their blood type (A+, A-, AB+, o-, o+), and then completed the 60-item NEO-PI (Costa & McCrae, 1985; McCrae & Costa, 1987), considered a reliable and valid assessment of the five dimensions of personality. Participants responded to each item using a five-point Likert scale, from 0=“Strongly Disagree” to 4=“Strongly Agree. Upon completion, participants were debriefed as to the purpose of the study and expected results.

### 3. Result

A MANOVA was used to compare the blood group (A+, A-, AB+, o-, o+) means of students for the five subscales of NEO Personality Inventory (NEO-PI): Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness. Analysis using multivariate analysis of variance (Wilks' Lambda) for unrelated measures revealed a significant main effect of the manipulation of blood type at an alpha of .01, Wilks' Lambda = .52,  $F(5, 115) = 4.72$ ,  $p = .001$ . This means that Conscientiousness and Openness are significant in blood type. Table (1) show the LSD Post Hoc Test: The multiple comparison between group indicate that in openness difference between A+ and B+, B+ and AB+, B+ and O+, B+ and O- are significant. Also in Conscientiousness the difference between A+ and B+, A+ and AB+, A- and B+, B+ and O+, B+ and O+, B+ and O-, AB+, O+ is significant. A measure of effect size,  $\eta^2 = .25$ , indicated a relatively large effect.

Table (1): The multiple comparison of blood type in personality subscale

Dependent variable	Blood type(I)	Blood type(j)	Mean difference	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Openness	A+	B+	4.95	0.001	2.11	7.79
	B+	AB+	-5.87	0.001	-9.28	-2.67
		O+	-3.79	0.012	-6.74	-0.83
		O-	-6.40	0.001	-10.03	-2/76
Conscientiousness	A+	B+	5.73	0.005	1.79	9.66
		AB+	3.64	0.023	0.50	6.78
	A-	B+	7.36	0.013	1.55	13.18
	B+	O+	-7.32	0.001	-11.42	-3.23

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	O-	-5.20	0.043	-10.23	-0.16
AB+	O+	-5.24	0.002	-8.52	-1.90

#### 4. Discussion

Results indicate that that Conscientiousness and Openness are significant in blood type. Eysenck (1982) found that Type AB was related to lower scores on Conscientiousness but Rogers, & Glendon (2003) reported that Type AB scored higher on Conscientiousness compared to other respondents. Newly Cramer and Imai (2002) and Rogers and Glendon (2003) investigated the relationship between blood type and personality using measures based on the five-factor model. Neither study showed any significant relationship between blood type and the five factors of personality. That blood Type B individuals would score higher on neuroticism than would individuals with blood types A, O, and AB was not supported (Rinieris et al.,1980). That blood Type O individuals would score higher on extraversion than would individuals with blood types A, B and AB was not supported. No significant relationship was found between blood type and extraversion for this sample (Cramer and Imai, 2002). That blood Type AB individuals would score higher on conscientiousness than would individuals with blood types A, B and O was not supported. Although not a significant relationship, blood Type AB respondents did score higher on conscientiousness than did respondents with other blood types (Nomi and Beshar, 1983). That blood Type O individuals would have higher optimism scores than would individuals with other blood types was not supported. No significant relationship was found between blood type and optimism, contradicting Furukawa (1927, 1930) and Nomi and Beshar (1983). Lester and Gatto (1987) reported that individuals with Type O or AB had significantly higher Extraversion scores than those with Type A or Type B did. Marutham and Prakash (1990) reported no significant difference on Extraversion scores among A, B or O blood types. Individuals with Type AB were less extraverted than those having Type A or Type O were, according to Gupta (1990).

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