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Amreen Nahida
Department of Home Science
University of Calcutta, Kolkata
West Bengal, India.

Nandini Chatterjee
Department of Home Science
University of Calcutta, Kolkata
West Bengal, India.

A study on relationship between blood group and personality

Amreen Nahida, Nandini Chatterjee

Abstract

At present, many Japanese still believe in a blood type theory. In fact, several studies were also conducted in other countries like United States, Korea, and United Kingdom. (Yamazaki, 2002). The relationship between achievements, intelligence, study habits and personality characteristics are the point of attraction in many studies. In the present study, the association between blood groups and personality were examined. The study was conducted on 100 respondents, among them 50 were male and 50 were females. The subject age ranged from 20-40 years from middle income groups using purposive sampling and Eysenck's Personality Questionnaire-Revised (EPQ-R). The results of Chi tests showed that, there was a statistically insignificant difference between Blood group and Personality ($P > 0.05$) so there is no relationship found between blood group and personality.

Keywords: Blood Groups, ABO, Personality, EPQ-R

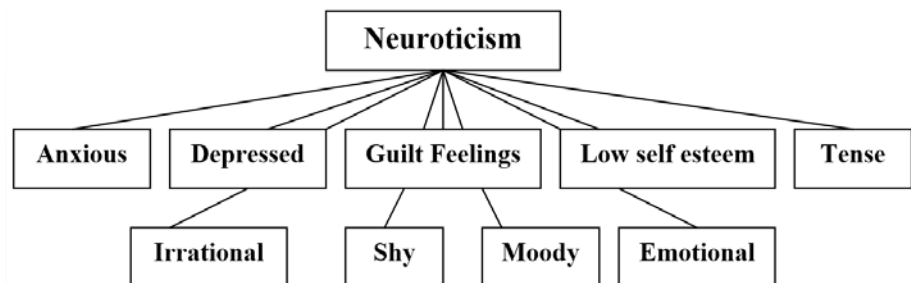
Introduction

Personality

The term personality comes from Latin word 'persona' which means mask used by the actors on stage. (Bhatnagar, 1998)^[4]. It is defined as the sum of an individual's trait which determines all behavior. It stems from us as an individual. It predicts our behavior over a wide range of situation. It does not alter dramatically over time. It distinguishes us in meaningful ways from others. (Paul, 1993) ^[13]. Personality is that pattern of characteristic thoughts, feelings, and behaviors that distinguishes one person. (Eysenck, 1971) ^[9]

Eysenck's Personality Theory

Eysenck's theory is based primarily on physiology and genetics. Although he was a behaviorist who considered learned habits of great importance, he considers personality differences as growing out of our genetic inheritance. He is, therefore, primarily interested in what is usually called temperament. (Hall and Linz, 1999)^[9] Temperament is that aspect of our personalities that is genetically based, inborn, there from birth or even before. That does not mean that a temperament theory says we don't also have aspects of our personality that are learned, it's just that Eysenck focused on "nature," and left "nurture" to other theorists. (Hall and Linz, 1999)^[9] Eysenck initially conceptualized personality as two, biologically-based categories of temperament. (Hall and Linz, 1999) ^[9]



(a)

Correspondence
Amreen Nahida
Department of Home Science
University of Calcutta, Kolkata
West Bengal, India.

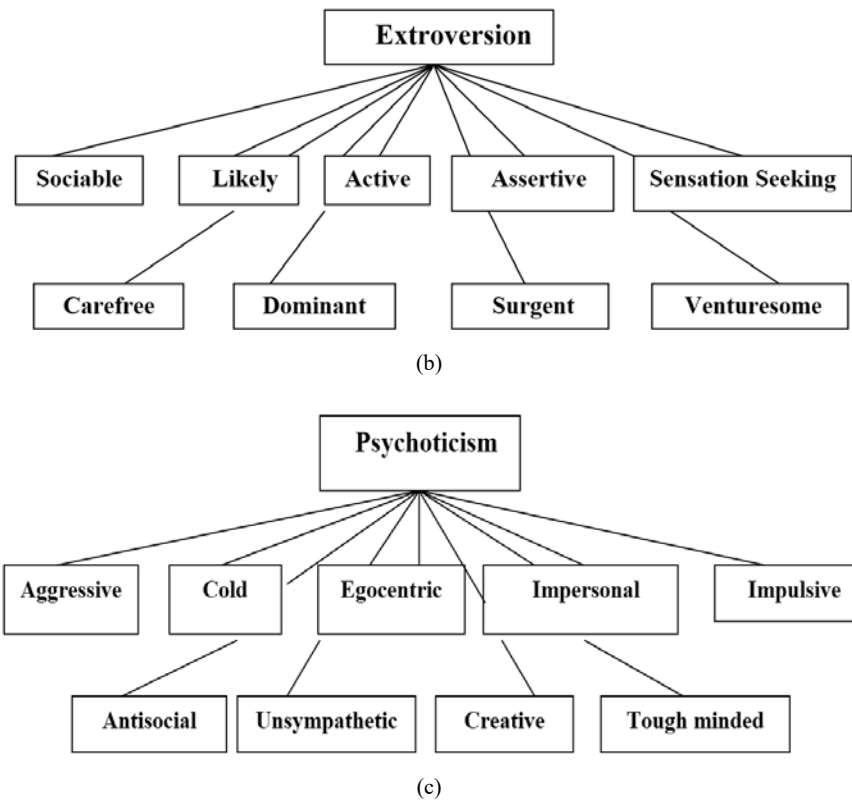


Fig: Traits making up the type concept of (a) Neuroticism. (b) Extraversion, (c) Psychoticism (H.J. Eysenck and Eysenck, 1985, pp. 14-15) (Hall and Linz, 1999) Psychoticism/Socialisation

Blood Groups

In 1900, Landsteiner showed that people could be divided into three groups (now called A, B, and O) on the basis of whether their red cells clumped when mixed with separated sera from people. A fourth group (AB) was soon found. This is the origin of the term 'blood group'. A blood group could be defined as, 'An inherited character of the red cell surface, detected by a specific alloantibody'.

The ABO system

ABO system is based on the presence or absence of antigens A and B: blood of groups A and B contains antigens A and B, respectively; group AB contains both antigens and group O neither. Blood of group A contains antibodies to antigen B; group B blood contains anti-A antibodies or iso-agglutinins; group AB has neither.

A review of previous studies suggests that compared to those with other blood types, blood Type B individuals would be higher on neuroticism, blood Type O individuals would be higher on extraversion and optimism, blood Type A individuals would be higher on agreeableness and blood Type AB individuals would be higher on conscientiousness. A main effect for gender on neuroticism and an interaction effect for gender and blood Type B on neuroticism were also predicted. A version of the big-five factor personality inventory developed by Goldberg, and the Life Orientation Test Revised were administered. MANOVA results showed that the combined dependent variables were not significantly affected by blood type, nor by gender, nor were there any interaction effects. No relationship between blood type and personality is supported by this study. [Rogers and Glendon, 2003]^[8]

The relationships between the six ABO genotypes or four ABO phenotypes and personality traits were examined using a multivariate analysis of covariance (MANCOVA), controlling

for age and sex. The MANCOVA data showed a significant difference in TCI scores among the ABO genotype groups ($F [7, 1393] = 3.354, p = 0.001$). A subsequent univariate analysis showed a significant difference in the mean scores for Persistence among the genotype groups ($F = 2.680$, partial $\eta^2 = 0.010, p = 0.020$). Similarly, dividing the ABO blood type into four phenotypes revealed a significant difference among the phenotype groups ($F [7, 1397] = 2.529, p = 0.014$). A subsequent univariate analysis showed a significant difference among the phenotype groups in the mean scores for Persistence ($F = 2.952$, partial $\eta^2 = 0.006, p = 0.032$). [Kaneda, Norio, Saruwati, Tsuchimine and Yasui- Furukor, 2015]^[9] Relationship between inherited genetic properties and personality characteristics are confirmed in many studies. It is assumed that blood groups have genetic properties and predictors of personality characteristics. In the present study, the association between type A personality with ABO blood groups were examined. The study was conducted on 400 students of Kurdistan University of Applied Science, using available sampling and Type A Questionnaire (TAQ). individual's blood group was authenticated. The results of one way ANOVA and post hoc LSD tests showed that, there was a statistically significant difference between O blood group than B blood group and O blood group than AB blood group ($P < .05$) in non toxic type A personality (TA2). [Ahmadian, Jalili, and Sharifi, 2015]^[1]

Mean of neuroticism in blood type O and blood type B had the highest (23.83) and lowest scores (22.28) respectively. Mean of extraversion in blood type A and blood type B had the highest (30.76) and the lowest score (28.67) respectively. Mean of openness in blood type A and blood type AB had the highest (25.72) and the lowest score (23.93) respectively. Means of agreeableness and conscientiousness in blood type A had the highest scores of 30.16 and 35.47 respectively. In this

study, personality factors of openness and extraversion were associated with different blood types ($p = 0.04$). From the five-factor personality traits, the three factors of Neuroticism, Conscientiousness and Agreeableness showed no relationship with blood types; however, both Extraversion and Openness were linked with different blood types. [Ahmadian, Jalili, and Sharifi, 2015] ^[2]

The blood group "B" was the predominant (36.23.0%) in both Rh positive and negative subjects among AL-hajouj Ethnic Group. Conclusion: The frequency of ABO blood groups in both Rh positive and negative subjects among the AL-hajouj Ethnic Group was B>A>O>AB where the blood group B was the commonest among Rh positive subjects [Fathelrahman M. Hassan, 2011] ^[7]

The study reveal that in boys, the Type I (complete vertical), in girls, Type II (branched) and among both, type II (branched) lip print pattern to be most prominent pattern. The present study showed a good consistency of the lip print pattern when observed for a period of six months consecutively. The study has not found any statistical correlation of lip print with family members or even any correlation between blood group and lip prints. [Astekar, Patel, Paul, Ramesh, and Sowmya, 2010] ^[11]

2. Need of the Study

The reason for doing this research as so less work being done on it. It will give light on different aspects of personality and help us in determining whether blood group have a relationship with personality or not. Besides this it will be beneficial for guidance and counseling, school administration, respondents who are taking parts in it, family, future researchers, society to quench their thrust from various aspects.

3. Statement of the Problem

- What is the blood group of individuals?
- What will be the personality of respondents?
- Will there be a significant relationship between blood groups and personality?

4. Objective

To find out the relationship between blood groups and personality.

5. Hypothesis

There will be correlation between blood group and personality.

6. Methodology

This is a descriptive and correlation study to explore the relationship between the blood groups and personality. The study populations were 100 individuals where halves the population were males and halves were females. The reason for choosing this population was to control the variables such as age, education, culture and social class. Measuring tool was Eysenck's Personality Questionnaire Revised (EPQ-R) constructed by Eysenck in 1985. measure of three important personality dimensions- Psychoticism, Neuroticism, Extraversion/Introversion. Each of these dimensions is measured by means of 90 questions carefully selected after lengthy item analysis using the Scandinavian Donations and Transfusions (referred to as "SCANDAT") and factor analysis. Psychoticism is an independent dimension that describes the personality as solitary, troublesome, cruel, lacking in feeling empathy, hostile to others, liking odd and unusual things.

Neuroticism refers to emotional liable of a person, emotional responsiveness, liability to neurotic breakdown under stress. According to Eysenck's Extraversion describes outgoing, uninhibited and sociable characteristics of personality. A person who is extravert is outgoing, social, friendly and free of anxieties. As opposed to extraversion a person who tends to withdraw into themselves when faced with emotional conflicts and stress is called introvert. Thus introverts are shy, avoid people and enjoy being alone. The mode of response to each item in the questionnaire is either "yes / no". Scoring is done with the help of scoring key that is provided along with the questionnaire. The higher the score the greater is the strength of the factor in that personality dimension.

After the completion of questionnaire the data were collected from them. The questionnaire was scored with the help of scoring key.

Statistical Analysis of the Data

The collected data should be statistically analyzed to interpret the data properly. For this purpose some statistical treatment were applied to the data score by the following formula:

Mean

Often referred as average, it is the sum of all data values divided by total number of data items.

$$\bar{X} = \frac{\sum X}{N}$$

$\sum X$ = sum of all values

N = number of data items in sample

\bar{X} = mean

Standard Deviation

Standard Deviation of a set of observation is the square root of the arithmetic mean of squares of deviation from arithmetic mean.

$$\sigma = \sqrt{\frac{\sum (x - \bar{x})^2}{N}}$$

Where

σ = the standard deviation

x = each value in population

\bar{x} = the mean value of the values

N = the number of the values (the population)

CHI - TEST

To find the relationship between blood group and personality the following formula of Chi Test has been used:

$$\chi^2 = \left[N \times \left\{ \frac{f_{ij}^2}{f_{i \cdot j}} - (1) \right\} \right]$$

Where

N = total number of observation

f_{ij} = the frequency of i^{th} column and j^{th} row

$f_{i \cdot}$ = number of column (blood groups)^x

$f_{\cdot j}$ = number of row (personality)

7. Result and Discussion

Mean (X) and Standard Deviation (σ)

	Blood Group A		Blood Group B		Blood Group O		Blood group AB	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Psychoticism	6	2.433	5.04	2.537	7.16	1.993	7.4	2.466
Neuroticism	4.68	1.737	4.4	2.098	5.84	1.641	4.6	2.245
Extraversion	5.24	1.305	5.92	1.383	4.8	1.811	5.04	1.311
Lie Score	6.08	1.230	6.24	1.105	6.08	1.324	5.72	1.217

Blood Group A

Product Moment

Personality/ Blood group	Blood Group A	Blood Group B	Blood Group AB	Blood Group O	Total
Psychoticism	10	5	18	14	47
Neuroticism	4	4	2	6	16
Extraversion	2	16	2	2	12
Lie Score	9	10	3	3	25
Total	25	25	25	25	100

Result: $\chi^2 = 0.940669499$

$df = (4-1) \times (4-1)$

$df = 3 \times 3 = 9$

$P > 0.05$ as $\chi^2 = 0.940669499$ and the value on 0.05 is 16.919 whereas in 0.01 is 21.666.

So in both the cases 0.05 and 0.01 P is less than the calculated value. So our answer is non significant and so null hypotheses is accepted. There is no correlation between blood group and personality.

Type A

Its noticed that blood group A are depicting psychoticism nature while in previous study explored that A+ blood were more impulsive and A+ or O+ blood were more sociable. [Gupta, 1990]. Type A individuals would be higher on agreeableness. [Glendon and Rogers, 2003] ^[8]

Type B

It noticed from the study that blood group B are extravert in nature as in previous Study shows that blood Type B individuals would be higher on neuroticism. [Glendon and Rogers, 2003] ^[8]

Type AB

Blood Type AB is also showing psychoticism nature while in previous studies type AB individuals found higher on conscientiousness. [Glendon and Rogers, 2003] ^[8]

Type O

Blood Group O are psychoticism nature while in previous study blood type stands for extraversion. [Glendon and Rogers, 2003] ^[8]

8. Conclusion

The study was conducted to find out the correlation between Personality and Blood Groups. The sample size was 100 out of this 50 males and 50 females subject were chosen. The subject age ranged from 20-40 years from middle income groups. They all were graduates except few. To find out this relationship Eysenck's Personality Questionnaire-Revised (E.P.Q-R) was used. The samples were taken purposively from Kolkata and Burdwan as the time was limited. The data was collected individually by giving proper instruction. After collection of data we treated them statistically and its found that Blood Group A, AB, and O are possessing psychoticism

nature while Blood Group B having extraversion nature. Finally no correlation ship found between blood group and personality.

It is concluded that this work needs further investigation, as Psychoticism score is higher than previously suggested. Further research needs to look at EPQ-R score's, as it appears that these situational factors like short duration, short sample size may be a contributing determinant to scores on such questionnaires.

9. Limitation of the Study

There are some limitations that may affect the study adversely. They are as follows:

1. Because of short time the study could not be carried out elaborately.
2. Sample size was also not enough large.
3. Sampling technique was purposive and not random.
4. Personality test like 16PF, NEO-PI could have been used.
5. Higher level of statistical technique could not be used because of lack of randomness in sample.

10. Recommendation for the Future Study

There are some recommended features which have to be followed for future studies

1. Sample should be large enough.
2. The sampling should be random rather than purposive.
3. The other personality test should be used.

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