

Full Length Research

Blood Groups and their Relation with Intelligence among a Sample of Jordanian Universities students.

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This study aimed to know the relation between the four blood groups (A, B, AB, O) and intelligence for universities' students who reached (194420) students and it was tested on (364) students intentionally distributed to four equal groups; (91) for each group according to their blood group of six Jordanian Universities, which are:

Jerash University, University of Jordan, Yarmouk University, Philadelphia University, Irbid National University, and Al-Balqa' Applied University.

The study found that the blood group (AB) received the highest average in the Intelligence Quotient (IQ) test which is also the highest in the GPA. And that the blood type (B) was the lowest in the GPA and in test results. The researcher recommended to expand the circle of the research to include all Jordanian universities, other universities and schools in a longer periods of time.

Keywords: Blood groups, Mental abilities, Intelligence, GPA

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INTRODUCTION

Intelligence is an abstract word and hypothetical formation which does not refer to something tangible owned by the individual. And consequently it cannot be noticed directly, and therefore cannot be measured directly. But we infer its effects and results through mental tests. According to this, intelligence is the common denominator between mental processes and its connection with intelligence to varying degrees.

Since the cognitive side, discovering the common and different qualities between things and ideas and their relation with each other and with others, the ability to

devise ideas, and find solutions for problems need to activate the mind and propel mental processes, especially the upper ones, and all that is belonging to one mould which is *intelligence*.

Scholars have given a variety of definitions. Calvin defined it as the ability to learn, as defined by Terman as the ability to do abstract thinking, while Binette defined it as the ability to fittings and self-criticism.

Hence, it can be said that these various definitions have emerged from the same angle that we look to intelligence through it. Intelligence has been positively

associated with success in practical life; it associated with work in the company, factory, and store. Also, it has been associated with married-life and dealing with sons, family, and society. In addition, it has a strong relation with academic achievement.

Intelligence is a theoretical ability that affects all sorts of mental activities, no matter what are the subject of the activity and its shape. And no matter how difficult and marked by complexity and abstraction. Even if it has been associated with the economy or social values still requires focus, energy, and resisting emotionality and nervousness. Does intelligence has a relation with the blood group of the person? And does the personality trait has a relation with the blood type? Questions will be answered by the researcher in this research.

Statement of the Problem and Significance of the Study:

Mental abilities have the interest of theorists and reforming educators. It is the window that education looks through it on the scientific and technological achievements to understand and contribute to its progress and prosperity. Understanding and contributing improves by virtue of the brain's ability to link, and best investment. And this is the top of human thinking which distinguishes this marvellous creature.

The investment of this ability is not of the same quantity and the same way in all humans, but it differs according to their levels of intelligence. And it is an aspect of differences aspects among individuals.

Many studies conducted on intelligence. Scientists and researchers worked hard to probe the depths and mysteries of this extraordinary ability and the general engine for all abilities and other skills, but they diverse in its source between individuals. Some of them say that it is hereditary and others contend that it is an educated and environmental. When blood groups is hereditary which relates to the blood groups of parents, then what prevents here the presence of a relationship between IQ and heredity that is genetic biological in its origins. Hence, this study came to show the relationship of blood groups with factor of intelligence (Nashawati et al., 1988). The study aims:

- 1- To know about blood types and its distributions globally according to geography and human strains.
- 2- To know about the personal, behavioural, and physical characteristics of individuals, depending on their blood groups, their food's sort, and the appropriate food for them.
- 3- Making a comparison between individuals of different blood groups in terms of IQ and achievement.

Questions of the study:

This study aimed to answer the following main question:

- What is the relation of blood groups with the factor of intelligence?

And the sub-questions that fall under this main question are:

1. What is the relation of blood type (A) with the factor of intelligence?
2. What is the relation of blood type (B) with the factor of intelligence?
3. What is the relation of blood type (AB) with the factor of intelligence?
4. What is the relation of blood type (O) with the factor of intelligence?
5. Are there any differences with statistical indicators among males and females students in Jordanian universities?

METHODOLOGY

Limitation of the Study

- 1- Spatial limitations: the study limits itself on students of Jordanian universities.
- 2- Qualitative limitations: the study limits itself on students in the second semester 2012/2013.
- 3- Qualitative limitations: the study limits itself on university's students whose ages ranging between (18-22) years.

Population of the study and its sample

The population of the study consisted of (194420) students of Jordanian universities.

And the sample of the study consisted of (364) students of Jordanian universities and Table 1 represent this:

Tool of the study and procedures

The researcher used Otis- Lennon's test for mental ability and which is in the appendix of the unpublished PHD dissertation by atoom (2002) to determine the (IQ) for students in universities. The tool of the study consisted of (30) multiple-choice paragraphs included (8) paragraphs related to verbal comprehension, (7) paragraphs related to verbal inference, (6) paragraphs related to modal inference, and (9) paragraphs related to numeral and quantitative inference (Otis and Lennon, 1969).

Not only the researcher asked the student about his/her blood type, but he also did a blood test with the help of crew of Nursing Faculty at Jerash University to determine

Table 1. Sample of the study due to Jordanian universities and Blood Groups

University	Males	Females	Blood group				Total
			A	B	AB	O	
Jerash University	30	34	16	16	16	16	64
University of Jordan	38	34	18	18	18	18	72
Al-Balqa' Applied University	32	28	15	15	15	15	60
Yarmouk University	34	34	17	17	17	17	68
Philadelphia University	20	28	12	12	12	12	48
Irbid National University	28	24	13	13	13	13	52
Total	182	182	91	91	91	91	364

blood groups for each student of the sample and wrote this down in the test booklet.

Theoretical background and literature review

Intelligence is a number derived statistically refers to mental abilities that the individual owns and used them to solve problems and to get the cognitive, motion, and emotional skills. Man has many different abilities, including measurable and immeasurable ones. And these abilities could be an indicator to achieve practical and academic achievements.

Binet's test considers of the most famous IQ tests. It is the first real test which was prepared to measure mental abilities and many amendments was carried on it and Terman edited it and named as (Stanford Binet) and it is in levels and various pictures.

Types of intelligence

1- Emotional intelligence: Goleman defined it as the ability to recognize our personal feeling and feeling of others and that to prepare ourselves and to manage our emotions correctly in our relations with others. Emotional intelligence includes social intelligence and also includes other types of intelligence and it also improves and evolves according to each person and environment. On the contrary, rational intelligence does not move and clings to the person for his/her entire life.

2- Artificial intelligence: is a system that assimilates the individual environment and takes actions that increase its chance of success in achieving the mission of his team (John McCarthy, 1979).

And there are abilities for artificial intelligence include logical thinking, knowledge, planning, learning, communication, perception, and the ability to move and change things.

3- Social intelligence: is the human ability to move

and negotiate in the complex social relations and data effectively and it is the fertility of our qualitative life that makes humans what they are.

As Honeywell Dos sees that it is the result of the total psychological and social awareness, social beliefs, advanced stances, capabilities, and the will to manage social change (complicated). And unlike the standard IQ test, it is not static and tends more to Piaget's theory, which states that intelligence is not a constant feature but a complex pyramid of data processing skills and which stand behind the balance of the adaptation between the individual and the environment. And the individual could change his/her stance and behaviour towards his/her complex social environment.

4- Linguistic intelligence: the easiness in the production of language, feeling the difference between words, rhythm, and its order, the ability to build and compose the structure of the language, and knowing the meaning of the language, and recognizing phones of the language.

People with linguistic intelligence love reading, writing, storytelling, and creativity in production, places, and dates. And they also have a growing linguistic balance and communicate with other with a high verbal skill.

5- Sentimental and spiritual intelligence: is a set of personal features and sentimental skills that enable the individual to understand the feelings and emotions of others. And consequently, the ability to rationalize his/her own social and psychological life. The ability to invoke the appropriate feelings to the right extent with the right person and it is come with training (Dr. Nuha Salamih).

6- Multiple intelligence: Gardner (1983) put his theory in *multiple intelligence* in seven types. The first and the second were divided as a model in schools, while the third, fourth, and fifth are intelligences related to arts. The sixth and the seventh is considered of the personal intelligences. Gardens divided multiple intelligence into linguistic, mathematical logical, musical, sensor motor, spatial, social personal, and self-personal intelligence. But (Gardens) added later three types of intelligences

Table 2. Blood types and their percentages among humans

Blood group	The percentage%		
	+	-	Total
A	34	6	40
B	8	1	9
AB	3	1	4
O	40	7	47

which are natural, spiritual (sentimental), obligatory humane (ethical) intelligence.

And there are many studies and theories about intelligence and its types like (Ibrahim, 1985).

Crystal Intelligence.

Finally, we find ourselves face new and fast variables. So, it is our great responsibility to look for new experience, modern and renewable ideas related to knowledge, and linking the thinker mind with its neurological and psychological activities. And that make it clear about the importance of brain studies. The theory of multiple intelligences is a knowledgeable model aims to make the individuals use their intelligences in an unconventional ways which designed to determine the proper intelligence for appropriate knowledge employment and thus accelerate the education and gives positive results with the learner's enjoyment and happiness of the educational process.

Blood Groups define some human's characteristics

***Blood:** is a red liquid consists of a disc shaped cells which is a concave-sided. Its job is to transfer (food and oxygen) to all parts of the body and get rid of waste products (carbon dioxide and hormones). Blood consists of plasma by 55%, white blood cells and platelets by less than 1%, and red by 45%.

Blood consists of four groups. And Table (2) shows the percentages of its existence among humans.

Blood Group A: the person of this blood type is a collaborator person who is intelligent, and has a sense of delicate, and maudlin despite his/her hiding for concern. According to that, the leadership positions do not suit him/her not because he/she is not good in doing this but by instinct. Therefore he/she needs for relaxation and focus exercises such as yoga. It is advisable to eat vegetables like beans, fruits like pineapples, and seafood for his/her digestive and immune system is sensitive and consequently will be susceptible to some diseases like

diabetes, anaemia, and heart diseases.

And the most famous figures are among this blood group such as Adolph Hitler and some of the United States presidents like Richard Nixon, Jimmy Carter, and Johnson.

Blood Group B: persons who belong to this blood type are characterized by flexibility and creativity. And they live in a balance way, love to do exercises, eat in a balance way, and carry in their inside the essence of the modern man that strengthens over difficulties in life. They also combine the intellectual activity with a delicate sense and have harmony in addition to inner peace. As a result, that make them less tended to challenge and confront.

Any imbalance leads them to difference in the functions of the organs of the body and thus gets susceptible for diseases and rare viruses. So, it is advisable to eat all kinds of food but in a balanced way. The holders of this blood group form the vast majority of the peoples of China, Japan, and Southeast Asia.

Blood Group (AB): holders of this blood group are called *spirituals* because they gently receive all kinds of life and without any negative perception of the consequences which will happen due to this. And they are the most charming and exciting people which may sometimes fall them in an emotional problems. It is advisable to avoid eating red meats and beans. And it is advisable to eat fish, vegetables, and milk products. It also advisable to do mild sport with long walk on feet mild as well as cycling and swimming.

Among the most famous figures in this category are John F. Kennedy and Marilyn Monroe.

Blood Group (O): the holders of this blood type are having in their lives physical and personal strength, stamina, self-reliance, courage, pursuit of success, leadership features, power, and optimism. And they are advise to do all kinds of sports especially the combat ones. In addition, it suit them all kinds of food as meat, fish, vegetables, and fruit and they are advised to focus on proteins.

Among the most prominent figures of this category are

U.S. President Ronald Reagan, the seventh Soviet Union President Mikhail Gore Bachev, Britain's Queen Elizabeth II, and Prince Charles.

LITERATURE REVIEW

In the study of (Amin-Zakil, 1976) the effect of methyl mercury in the blood on the IQ. The study shows that mercury affects the development of the central nervous system. The study was conducted on a sample of (780) children enrolled and were treated by using materials where Mercury is one of its components. The group was divided into two parts: 384 treats with (0.52- 0.54 mg) and (369) children treat with (0.84- 0.5 mg). The study concluded that there was no effect of MeHg statistically significant on IQ, but there is a positive effect on IQ when increasing the MeHg.

In Rogan's study (2005), it studied the relationship between platelets and IQ. And is there an increase of the impact of the rise number of platelets on children from age (2 – 7) years?

The study was conducted on number of children between the age of two to the age of seven and the concentration of the number of platelets is between(20-44) micrograms per liter. The study concluded that the increase in the number of platelets increases the IQ.

In the study of Pocock and Schwartz (1994) on the number of platelets in the childhood and IQ when students enrolls in schools. And that because IQ is not stable till the age of (4) years or more. The study found that increasing of the ratio of the number of platelets in the blood increases the IQ.

In Barakat's study (2007) about blood groups and their relationship to certain emotional personal traits on a sample of university students. The study was applied on (240) students who are studying at Al Quds Open University Tulkarm. And they were distributed into four groups according to blood type (A, B, AB, O). The study concluded the presence of statistically significant differences between the students' degrees on the mental depression, introversion, emotion, and pessimism for students whose blood type is (B). The direction of students whose blood type is (A) on the traits of extroversion and optimism. And the direction of students whose blood type is (AB) on the trait of poise. While the results showed the absence of significant differences between the degrees of students on the traits of anxiety of death and that attributes to blood type.

In an article published by the Daily Telegraph about the study conducted by researchers from the University of Oxford in collaboration with the Institute of Social and Economic Research in Essex district of Britain, where the study was conducted on more than 110 thousand children from the area of Bristol in the United Kingdom and the researcher Maria Iacovou, research assistant at

the Institute of Research, that children who were breastfed had higher IQ by three to five points in comparison with children who were not breastfed.

And the researcher justifies that the long-chain fatty acids in the breast milk of the mother helps in the development of the brain and that breastfeeding improves the relation between the mother and child which increases of creating a stable mental and physical health for the child. Thus leading to adapt, anticipate, adjust and control the physical and the incorporeal environment of the child and all of that continue to happen with the child with time.

Dr. Safaa Abdel-Kader, a consultant psychiatrist, says that it has been scientifically proven that each person has characteristics different from other people, and that is due to blood type.

"Abdelkader" points that each type of the four blood groups has different characteristics. The holders of () blood type are characterized by kindness and frankness and they have a sense of art in how to deal with others. Also they are characterized by taking into account the feelings of others and not to injure them, and prefer socializing and meeting new people. And they are hesitant in making decisions, and it may be due to the frankness in dealing with others and thinking routinely somewhat.

She said a consultant psychiatrist that holders of this blood group have a high capacity to take responsibilities and perform their duties in a fully way. But they are keep thinking in the past and are very sensitive in dealing with others and do not accept criticism.

In the study of Bu Dinar (2011) about the differences in IQ among children aged (6-14 years), according to the difference in their blood types. The study has attempted to answer the questions as to whether there were significant differences between children aged (6-14 years) in both verbal and practical, and total IQ, according to the different types of their blood. The researcher has used the analysis of variance duo and the analysis of Shave in measuring verbal and practical IQ for professor (Ali Afir Far) (Moses, 2003).

The study found that the sample (AB) excels on all samples at levels of intelligence and then followed by the sample (O), while the sample (B) was the last one in IQ points.

A new study shows a correlation between height and IQ, which means that those who are shorter than average are more likely to have IQ less than the longest persons.

The researchers from universities of Edinburgh, Aberdeen, and London analyze the indicators of DNA on more than 6,800 people, over a period of 5 years, to prove that there is a correlation between height and IQ. The researchers found that it can be explained 70% of the relation between height and IQ according to genetic matters. While the other 30% is related to environmental factors.

Table 3. Blood type, GPA, and the level of achievement for the test sample of Jerash university

Blood group	GPA	Level of Achievement on the test	Number of the sample
A	70	68	16
B	69	65	16
AB	78	76	16
O	72	70	16

Table 4. Averages and standard deviations of the test grades in verbal comprehension for each type of blood groups and for both sexes

Blood group	A		B		AB		O		Total	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Average	68	70	64	65	74	78	70	72	69	71
Standard deviations	1.8	1.7	2.1	2	1.3	1.2	1.6	1.5	1.7	1.6

Ricardo Marioni, from the faculty of Genetic Science and Atomic Medicine at University of Edinburgh, said for the Scottish site of *Scotsman*: "We tested whether genetic similarity which is based on the DNA is associated with length and intelligence." And he added that "the previous studies used twins data or family data to determine the similarity between height and IQ. While our study was the first of its kind that scrutinizes in the indicators of DNA between people who do not relate to each other by any connection."

Marioni affirmed that researchers found that "there is a strong genetic relation between height and general intelligence," and declared that it was found that people whose height is less than the overall average tend to be less intelligent than the most taller ones.

RESULTS AND DISCUSSION

Table (3) shows the blood type, GPA, and the grade in the test for a (16) students of Jerash University. The researcher returned to Department of Admission to extract the GPAs for the sample.

From the results in the table above, we see that there is correspondence in the test's results and the cumulative average. And as illustrated in the table, students whose blood group is (AB) got the highest cumulative average and the highest grade in the test, while students whose blood group is (B) got the lowest cumulative average and the lowest grade. When calculating the correlation coefficient between GPA and the test's results it is found that it is equal (0.98) and it is a highly value and interpreted as logical because IQ correlates positively and highly. These findings are consistent with what was

published on the *Japanese-Zodiac* site.

The holders of (AB) blood type are the highest ones in the percentage of their intelligence. And that scientists and geniuses in this blood group are more than any other holders of other blood groups.

When interviewed the students whose blood group is (AB) it is clear that they are more credible and honest. And characterized by self-confidence and shyness which contradicts with self-confidence. Thus, it is difficult to judge on the holders of this blood group.

The results of the Table 4 illustrate that the highest averages came from the holders of (AB) blood group and females have higher averages than males. And this agrees with studies which say that females have more linguistic fluency than males. Also, standard deviation was the less which means that females are more convergence in the results of the test than males.

Table 5 results show that the average of the results was the highest for the holders of (AB) blood group, and that there is a convergence between the averages between males and females. But females whose blood type is (O) is higher in (5) degrees in the averages than males.

From the results in Table (6) we can say that the average of the test's results higher in males than females.

Table 7. Averages and standard deviations of the degrees of the test in numerical and quantitative inference for each type of blood groups and for both sexes.

Table (8) shows that differences between males and females in test's results are minor ones as a whole. And this is consistent with the normal distribution of traits among humans. But there are differences on blood

Table 5. Averages and standard deviations for test's results in verbal inference for each type of blood groups and for both sexes

Blood group	A		B		AB		O		Total	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Average	67	68	65	65	67	78	68	73	68	71
Standard deviations	1.7	1.6	2	2.2	1.2	1.2	1.6	1.5	1.6	1.6

Table 6. Averages and standard deviations for test's results in formal inference for each type of blood groups and for both sexes

Blood group	A		B		AB		O		Total	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Average	71	70	68	67	80	78	70	69	72	71
Standard deviations	1.6	1.6	1.7	1.8	1.5	1.4	1.7	1.7	1.6	1.6

Table 7. Averages and standard deviations of the degrees of the test in numerical and quantitative inference for each type of blood groups and for both sexes

Blood group	A		B		AB		O		Total	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Average	72	86	66	65	82	80	86	76	72	70
Standard deviations	1.8	1.7	1.7	1.7	1.4	1.5	1.6	1.6	1.6	1.6

Table 8. Averages and standard deviations of the degrees of the test as a whole for each type of blood groups and for both sexes

Blood group	A		B		AB		O		Total	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Average	70	69	66	66	78	78	69	70	70	71
Standard deviations	1.7	1.7	1.8	1.8	1.4	1.3	1.6	1.6	1.6	1.6

groups in the results of the test, where the results were in favour of the blood type (AB) by an average of (78). While blood type (B) was the least one between the results by an average of (66).

When using ANOVA (Analysis of Variance) to indicate the indication of difference between the average of students' scores on the test as a whole depending on their blood groups and then reach to the results shown in Table (9).

The data in Table (9) reveals the presence of significance differences between the averages of students' scores in the test as a whole according to their blood groups. To find out the direction of these differences a dimensional comparison was used.

From the result in Table (10), it is clear that:

- 1- The presence of differences with statistically significant ($\alpha = 0.05$) between the average scores of students in the test in favour of the blood type AB.
- 2- Lack of differences with statistically significant ($\alpha = 0.05$) between the average scores of students in the test in favour of the blood type (A) and (O).
- 3- The presence of differences with statistically significant ($\alpha = 0.05$) between the average scores of students in the test between (A) and (B) blood groups in favour of the blood type(O).
- 4- The presence of differences with statistically

Table 9. The results of ANOVA for the students' degrees in the test as a whole according to their blood groups

Source of variation	Number of squares	Degree of freedom	Average of squares	The calculated value of (f)	Level of significance
Between groups	78.5	3	26.23	8.1	0.01
Within groups	1256	363	3.46		
Total	334.5	366			

Table 10. LSD test for dimensional comparisons

Blood group	A	B	AB	O
A (69.5)		*	*	-
B (66)	*		*	*
AB (78)	*	*		*
O (70)	-	*	*	

*there are differences with statistically significant

significant ($\alpha = 0.05$) between the average scores of students in the test between (A) and (B) blood groups in favour of the blood type (A).

RECOMMENDATIONS

The researcher recommends:

- 1- Conducting further studies on this topic due to its importance in the educational field in how to deal with students and to take into consideration the individual differences.
- 2- Conducting further studies that deals with blood groups and other variables such as thinking, attitudes, trends, and creativity.
- 3- Conducting further studies to include Arab and international universities, schools, and other institutions of society.

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