

## THE INFLUENCE OF BLOOD TYPE ON ACADEMIC ACHIEVEMENT

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### Abstract

Blood group is a blood grouping system that is based on the types of antigens that humans have. Blood type is very important information to reveal a more specific identity that has been granted since birth. Every individual has their own blood type. Blood type not only explains the type of blood owned by an individual, but can also explain his personality. From a psychological perspective, each blood type has differences in the formation of behavior and personality characteristics. Personality is the organization of attitudes that a person has as a background to behavior and determines a person's personality. Personality is an integration of aspects, such as behavior, intelligence, talent, attitudes, motives, interests, abilities, morals, and physical aspects, if you have these aspects of personality such as high interest in learning, of course, it will tend to affect learning achievement. The purpose of this study was to determine the effect of blood type on student academic achievement conducted at the Almuslim University Midwifery Diploma III Program. This research method is descriptive statistical research. The population of this study were students of the Diploma III Midwifery Program with a sample size of 42 people using total sampling technique, data analysis using simple linear regression test. The results of the research univariate analysis are the characteristics of the majority of respondents aged 19 years (85.7%), the work of parents of farmers amounted to 16 (18.1%), graduates from high school 19 respondents (45.2%). This study shows the majority of respondents have blood type O with 22 (52.4%) respondents and the majority of respondents' achievement is underachieving with 29 (69%) respondents. The results of bivariate analysis of simple linear regression test obtained Sig value (0.533) > 0.05. The conclusion of this study is that blood type has no effect on academic achievement, academic achievement is not only due to internal factors but also due to external factors.

Keywords: Blood type; academic achievement

### 1. INTRODUCTION

Blood group is a blood grouping system that is based on the type of antigens that humans have. The ABO blood classification system was first discovered by Karl Landsteiner in 1900 by mixing erythrocytes and blood serum of his staff. From the experiment, Landsteiner found 3 of the 4 types of blood groups in the ABO system, namely A, B, O. The fourth blood group, AB, was discovered in 1901. Blood group examination to detect the presence of antigens on the surface of the red blood cell membrane by reacting human blood with anti-sera A and antisera B [1]

Every individual has their own blood type. Blood type not only explains the type of blood owned by an individual, but can also explain his personality. Each type of blood type O, A, B, and AB has its own personality characteristics (TYAS et al., 2014). Personality is the organization of attitudes that a person has as a background to behavior. Blood type is the most popular way to determine a person's personality and temperament. The scientific reason is that blood type is determined by certain proteins that build all the cells of our body, thus determining our psychology [2]

The determination of a person's personality traits based on blood type has long been developed and researched by several Japanese scientists since the 1930s, among whom Toshitaka Nomi is quite popular. Nomi suggested that each type of blood type has a different emotional rhythm and learning rhythm. In addition to this, it is also used to get to know more about the child's personality in an effort to discipline children based on their blood type [3]

Having emotional intelligence can be stated as one of the important factors that should be possessed by students who have the need to achieve better learning performance in school and prepare them for the real world (Thaib, 2013). From a psychological point of view, each blood type material cultivates differences in the formation of human feelings and bodies. Blood type is a basic substance that affects our temperament and actions, providing a deep connection. In Japan, knowing one's character through blood type is a common tradition. However, the character traits based on blood type are not necessarily possessed by people of a certain blood type, but there are inherent tendencies. By knowing a child's strengths and weaknesses, we can get to know the child's heart which is the key to building their personality [2]

Changes that occur in personality are psychosocial developments related to emotions and social relationships. Personality is an integration between aspects, namely psychological aspects such as behavior, intelligence, talent, attitudes, motives, interests, abilities, morals, and physical aspects, these aspects are internal factors that exist within students or students. High-achieving students are more likely to be influenced by internal factors, if students or students have a high interest in learning, of course, they will tend to do what they are interested in continuously. This can be seen from the learning process in class where students are active or not, working on assignments or not will certainly affect their learning achievement [4].

Learning achievement has a very important meaning as an indicator of the quality of learning activities that students or students have achieved. Learning achievement is the result of learning achieved after going through the process of teaching and learning activities. Learning achievement can be shown through the grades given by a teacher from the number of fields of study that have been studied by students. Every learning activity certainly always expects to produce maximum learning. In the process of achievement, learning achievement is strongly influenced by various factors, namely internal factors and external factors [5]

Blood type as one of the genetic factors is thought to have a role in determining learning achievement in addition to learning style and achievement motivation. According to research conducted by Fauziar, blood type A has a higher average value of learning achievement than other blood types in the order of blood types O, B and AB (Fauzisar, 2016). People with blood type A are people who are easy to work with, intelligent, have tenderness, and although very sentimental, they hide anxiety, have a great sense of responsibility, so this individual always runs his life seriously, very carefully, and thoughtfully ([6]. Based on the background, researchers conducted research on the effect of blood type on academic achievement.

Blood type is one of the most important aspects of human life. Blood type is a classification system for classifying blood based on the presence of certain antigens or antibodies on the surface of red blood cells. The blood group system classifies human blood groups into four main types, namely A, B, AB, and O. Blood type is a special characteristic of the blood of an individual due to differences in the types of carbohydrates and proteins on the surface of the red blood cell membrane. In this world, there are actually about 46 types of antigens known besides ABO and Rh antigens (Maharani and Noviar, 2018). The ABO system discovered by Karl Landsteiner is the most important system in blood banks and transfusion medicine, the main antigens are called A and B, the main antibodies are anti-A and anti-B. The genes that determine the presence or absence of A or B activity are located on the chromosomes. Determination of blood type determines the type of agglutinin present in cells and determines the agglutinin present in serum [7].

Although blood type personality tests do not have strong scientific backing, many people, especially the Japanese claim that this is true. There are several analyses of a person's personality according to blood type including: 1) blood type A is synonymous with being organized, critical, responsible, consistent with what has been planned, calm in facing problems, and trying to be fair in any situation. Unfortunately, there are traits that make people with blood type A tend to be disliked, namely stubbornness and perfectionism. 2) Blood type B has a high spirit, active, creative, and always curious. They want to know many things because of their high curiosity. If they are interested in something, they will do it wholeheartedly. Their relaxed character tends to be considered less cooperative because they prefer to follow their own rules and ideas. Some people with blood type B also tend to be individualistic and prioritize logic over feelings. 3) Blood type AB is difficult to predict, although his personality likes to change, has a critical, rational, responsible, helpful, and adaptable character, tends to be indecisive, forgetful, and sensitive, has a soft feeling, because of his high empathy for other people's situations. 4) Blood type O is synonymous with an

attitude that is easy to adapt to new environments or tends to be kind, generous, energetic, open, and respectful of other people's opinions so that it is easily liked by many people [8]

Academic achievement is the result achieved by students in the learning process. In addition, it can be said that academic achievement is the achievement that students get when they successfully win competitions or competitions that are closely related to formal education in schools or lectures. Academic achievement is often measured by assessments such as test scores, class rank, or other academic awards. This academic achievement is a term intended as a form of achievement of the level of student success against the learning efforts they have done optimally [9]

Academic achievement has four characteristics, which include: 1) Academic achievement is a measurable change in behavior. Measurement of these behavioral changes can be done using achievement tests; 2) Academic achievement is the result of the individual's own learning, not the results of others; 3) Academic achievement can be evaluated based on the criteria set by the assessor based on the standards achieved by the group; 4) Academic achievement obtained by students is not only of an intellectual cognitive nature, but can also be realized in the quality of the student's personality.

## 2. METHODOLOGY

The design used in this research is descriptive design. The research design is a strategy for proving variables within the scope of the study to answer the researcher's questions. This research was conducted to determine the effect of blood type on academic achievement. Data collection uses primary data and secondary data. Primary data, namely blood type, is obtained by conducting blood type checks on respondents who do not know their blood type by first asking for consent from respondents for their willingness to become respondents. Secondary data, namely academic achievement, was obtained by looking at the learning outcomes in the second semester. The population of this study were second semester students of the Diploma III Midwifery Program at Almuslim University, the number of research samples was 42 people with total sampling technique.

Data analysis using univariate and bivariate analysis. Data analysis using SPSS application. Univariate data processing is to determine the frequency of respondent characteristics including the frequency of age, school graduates and parents' occupations. As well as to determine the frequency distribution of the independent variable (blood type) and the dependent variable (academic achievement). Bivariate data processing using simple linear regression test with Sig. <  $\alpha$  (0.05) which aims to determine whether there is an effect of blood type on learning achievement.

## 3. RESULTS

Research conducted to determine the effect of blood type on academic achievement obtained the following results:

**Table 1:** Distribution of respondent characteristics based on age

No	Age	n	(%)
1	18 years old	1	2,4
2	19 years old	36	85,7
3	20 years old	4	9,5
4	21 years old	1	2,4
	Total	42	100

Based on the table above, it shows that of the 42 respondents, the characteristics of respondents based on age, the majority have the age of 19 years (87.5%), 20 years (9.5%) and the least nuts 18 and 20 years each 2.4%.

**Table 3:** Distribution of respondents' characteristics based on parents' occupation

No	Pekerjaan Orang Tua	n	(%)
1	Farmer	16	38.1
2	Trader	3	7.1
3	PNS	4	9.5
4	Self-employed	15	35.7
5	Fisherman	1	2.4
6	Laborer	1	2.4
7	Handyman	1	2.4
8	Driver	1	2.4
	Total	42	100

Based on the table above, it shows that the majority of respondents' parents' occupations are farmers with 16 (38.1) respondents, self-employed 15 (35.7), civil servants 4 (9.5%), traders 3 (7.1%) and the least fishermen, laborers, craftsmen, drivers each 1 (2.4%) respondents.

**Table 2:** Distribution of respondent characteristics based on school graduation

No	School Graduates	n	(%)
1	SMA	19	45.2
2	MA	13	31.0
3	SMK	10	23.8
	Total	42	100

Based on the table above, it shows that the majority of respondents are graduates of Senior High School (SMA) totaling 19 (45.2%), then graduates of Madrasah Aliyah (MA) totaling 13 (31.0%), and the fewest are graduates of Vocational High School (SMK) totaling 10 (23.8%) respondents.

**Table 4:** Frequency distribution of blood type

No	Blood Type	n	(%)
1	Blood Type O	22	52.4
2	Blood Type A	10	23.8
8	Blood Type B	10	23.8
	Total	42	100

Based on the table above shows that the results of the study of 42 respondents the majority of respondents had blood type O with a total of 22 (52.4%), blood type A and B each amounted to 10 (23.8%). Blood type O is the most common type of blood type found in the world. Blood type O has been recognized by the general public as a universal donor. Although blood type personality tests do not yet have strong scientific support, many people, analyze the personality of a person who has blood type O is identical to his attitude that easily adapts to new environments They tend to be kind, generous, energetic, open, and respect the opinions of others so that they are easily liked by many people, people with blood type O are easily influenced by others, lack focus, stubbornness, and prefer to be followers rather than leaders [8]

**Table 5:** Frequency distribution of academic achievement

No	Academic Achievement	n	(%)
1	Not/less outstanding	29	69
2	Outstanding	13	31
<b>Total</b>		42	100

Based on the table above, it shows that of the 42 respondents, the majority of respondents did not / did not achieve 29 (69%) and those who achieved 13 (31%). Learning achievement is an accession of the student learning process which is expressed in the form of grades. in an educational institution, the success of the teaching and learning process can be seen from the learning achievements achieved by students. Academic achievement is also seen from the results or level of ability that students have achieved after participating in the teaching and learning process within a certain time in the form of changes in behavior, skills and knowledge and then will be measured and assessed which are then realized in numbers or statements. Academic achievement is said to be perfect if it fulfills three aspects, namely: cognitive, affective and psychomotor [10]

**Table 6.** Linear regression test of the effect of blood type on academic achievement

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.207	.168		1.233	.225
	Blood Type	.060	.088	.107	.681	.533

Based on the table above, it shows that from the results of the bivariate test, namely the simple linear regression test, the effect of blood type on academic achievement obtained a Sig value (0.533) > 0.05, this indicates that there is no effect of blood type on academic achievement. Blood type has a role in shaping a person's personality such as behavior, intelligence, talent, attitudes, motives, interests, abilities, morals, and physical aspects. But in terms of achievement, this aspect is not the main factor in getting good achievement, in line with research conducted by Marie that blood type does not significantly affect a person's personality [11]. According to Rustika's research which examines the factors that influence academic achievement in adolescents, emotional intelligence has no effect on academic achievement [12].

Learning or academic achievement is not due to student intelligence alone, but there are other factors, namely external factors. According to Syah (2011) states that globally the factors that influence learning achievement can be divided into three types, namely: internal factors (physiological factors, psychological factors), external factors (family factors, environment, society), and learning approach factors [13].

Factors that can affect student learning achievement besides interest in learning according to Slameto (2013) include internal factors from the students themselves such as intelligence, talent, attention, maturity and readiness. Factors from outside the student also have a considerable influence such as learning facilities, teacher ability, peer influence, and good parental support [14] [15]. External factors, namely family factors, can be seen from the occupation of the respondent's parents, the majority of whom are farmers. Parents' work or economic status can support children's education which will affect children's achievement. This is in line with the results of research showing Chotimah that there is a significant influence between the socioeconomic status of parents on learning achievement [15].

When viewed from the characteristics of the respondents, the majority are 19 years old. Age 19 years is the age of late adolescence. Adolescence is a transition from childhood to adulthood which involves changes in various aspects such as biological, psychological, and socio-cultural, these adolescents experience changes both physically, emotionally, socially, intellectually, psychosexually and understanding of themselves. This period is characterized by negative traits in adolescents so that this period is often called a negative period with symptoms such as being



unsettled, less like working, pessimistic. and in the growth and development of adolescents experiencing changes in body shape, attitudes and ways of acting, this period is no longer said to be childhood and adulthood. in this period of development, sometimes there are surprising actions, passionate emotional outbursts, so that they often experience changes in their actions such as when learning at first excited but suddenly become reluctant to learn which ultimately affects their achievements [16]. This study has many limitations or shortcomings, including this study did not examine more deeply the independent variable (blood type) and also the dependent variable (academic achievement) thus limiting the scope of the study. in this study also has a small sample and only women. this study has little previous research data related to this study.

#### 4. CONCLUSIONS

Based on the results of data analysis, the conclusions of this study are

1. The frequency distribution of blood type obtained the majority of blood type O
2. The frequency distribution of academic achievement is obtained by the majority not achieving
3. There is no significant effect of blood type on academic achievement

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