Determining the Relationship Between Blood Donation and Altruism Level

Arzu Önel | iD | arzuonel@gmail.com
Kafkas University, Dede Korkut Faculty of Education, Kars, Türkiye
Meryem Konu-Kadirhanoğullari[1] | iD | meryem_6647@hotmail.com
Kafkas University, Vocational School of Social Sciences, Kars, Türkiye
Şule Firat-Durdukoca | iD | drsulefirat@gmail.com
Kafkas University, Dede Korkut Faculty of Education, Kars, Türkiye

Abstract
Altruism means helping others without expecting anything in return and solely for the sake of others; blood donation is one of the best examples of this pure aid. This research aims to examine the relationship between teacher candidates' altruism levels and blood donation attitude levels. The relational survey method, one of the subcategories of the general survey model, was used in the research. The research was conducted with 204 teacher candidates studying at a state university in Türkiye. Data were collected from the "Blood Donation Attitude Scale" developed by Çelik & Güven (2015). It was obtained by using the "Altruism Attitude Scale" developed by Ümmet, Ekşi & Otrar (2013) and the questions prepared by the researchers by taking advantage of the literature and taking expert opinions. Frequency and percentage calculations, mean, standard deviation, and Pearson correlation analysis were used to evaluate the data. As a result of the research, it was determined that there was a significant and statistically moderate positive relationship between the level of altruism and blood donation attitude. It was determined that the "Social and Social Responsibility" factor had the highest mean value for the Blood Donation Attitude Scale sub-dimensions, and the "Help in Traumatic Situations" factor had the highest mean value for the Altruism Attitude Scale sub-dimensions.

Keywords: Blood donation, Altruism, Teacher candidates

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[1] Corresponding Author

Introduction

Blood is considered a vital fluid because it carries all the substances necessary for life to be possible. Nutrient monomers taken into the body through nutrition, oxygen, the vital gas taken through breathing, and all products synthesized by the body are transferred to the relevant places through the blood. Therefore, all substances, both ingested and produced, are present in the blood. This richness gives blood a vital feature.

Throughout their lives, people need blood and blood products in serious clinical situations such as accidents, wars, disasters, surgical interventions, chronic diseases, pregnancy, and birth, where there is no other therapeutic option. Considering some bleeding diseases and surgical operations, sometimes 6-8 units of blood may need to be given to the same patient. On the other hand, one person needs blood every three seconds. In such health situations, human-to-human blood transfusion is a life-saving intervention. Since scientific studies to produce artificial blood have not yet yielded results, humanity needs healthy individuals to donate blood. For this reason, disseminating blood donation behavior and making it sustainable is, above all, a national and humanitarian duty. However, people are reluctant to donate blood for many reasons (Alla et al., 2019; Altındış et al., 2019; Savaş, 2019; Sameeya & Redy, 2018). A lot of misinformation, attitudes, behaviors, beliefs, and fears prevent people from donating blood (Altındiş et al., 2019).

Voluntary blood donation behavior occurs under the influence of people's attitudes, behaviors, beliefs, values, orientations, and some motivational elements and generally requires sacrifice (Hablemitoğlu et al., 2010), so donating blood is a way to save lives and give the gift of life to someone else. Donating is an altruistic behavior (Steele et al., 2008; Ümmet et al., 2013). Donating blood is one of the important altruistic behaviors that a person does with his own will (Düzgüner, 2013; Gillespie & Hillyer, 2002; Hablemitoğlu et al., 2010; Pennings, 2005; Piliavin, 1990). Altruism means helping others without expecting anything in return and solely for the good of others; blood donation is one of the best examples of this pure aid (Titmuss, 2018).

Altruism, defined as performing a behavior without expecting a reward (Mateer (1993), is based entirely on volunteerism, without any interest, and sometimes requires paying a price (Ferguson & Lawrence, 2016; Silk & House, 2011; Üzümçeker, Gezgin & Akfırat, 2019). Altruism was introduced by Auguste Comte in the 19th century and developed by Pitirim and Sorokin in the 20th century (Mutafçılar, 2008). Donating blood is more altruistic than other types of aid, as it is done without knowing who is being helped, and the only way to provide it is through voluntary donations (Yılmaz, 2022; Düzgüner, 2013). Blood donation is affected by various factors such as age, gender, education, socio-economic status, altruism, social responsibility, peer influence, access to health communication, knowledge about the importance of blood donation, previous donations, and the influence of active blood donors (Yalman and Karagöz, 2021). When the literature is examined, it is seen that studies on blood donation and altruism focus on the fields of medicine, nursing, and theology (Ateş et al., 2023; Çiftçi & Turan, 2021; Sağir, 2020). For example, Ateş et al. (2023) examined whether the altruistic attitudes and empathic tendencies of 2nd, 3rd, and 4th year students at the School of Nursing of a private university affected blood donation behavior. It was determined that only 27.8% of the 258 students who participated in the study donated blood, and no significant difference was found between the donation scores of students with and without blood donation experience. However, a significant difference was found in the helping sub-dimensions. As a result, it was determined that empathy and altruistic attitude alone were not sufficient motivating factors for blood donation. Çiftçi and Turan (2021) examined the effect of the altruism level of nursing students on blood donation attitudes in their study. The study was conducted with the participation of 321 out of 1200 students studying at a nursing faculty in Türkiye. The findings showed that the students' altruism level was high and their attitudes towards blood donation were positive. A positive and moderate relationship was found between the level of altruism and blood donation attitude. As a result, it was determined that as the level of altruism increased, attitudes towards blood donation also increased positively. In his study, Sağır (2020) examined the altruism and religious attitude levels of individuals in four professional groups, such as AFAD employees, nurses, preschool teachers, and religious officials. The research was conducted on 416 personnel. Men had higher altruism scores than women, and a significant difference was found between genders. In addition, a positively significant relationship was found between religious attitude and altruism, and the effects of age, profession, and altruism variables on religious attitude. When the international literature is examined, there are studies on blood donation and altruism. For example, Ferguson and Lawrence (2016) examined whether blood donation is a purely altruistic act. The study introduces the Mechanisms of Altruism (MOA) approach, which suggests that blood donation can be seen as altruistic, but the underlying motivations may be different. It shows that blood donation is a mixture of warm giving and reluctant altruism. Ferguson et al. (2008) proposed that blood donation is based on the benevolence hypothesis rather than altruism. They conducted three different studies and showed that both the donor and the recipient benefit. The results showed that beliefs in personal benefit predicted actual donations; only benevolence beliefs were related to donation intentions, and committed donors were more willing to accept benevolent

messages. Otto and Bolle (2011) examined how economic theory provides suggestions for modeling social motives associated with altruistic behavior. Survey results show that general altruism is associated with philanthropy but not with blood donation behavior. When different aspects of altruism are examined separately, they conclude that specific motives can be associated with specific behaviors. However, when the studies in question are examined, no research has been found specifically for teacher candidates. Therefore, this research can help us understand both teacher candidates' feelings of social responsibility and an important health behavior such as blood donation. This research aims to examine the relationship between teacher candidates' altruism levels and blood donation attitude levels. In this context, it is thought that this research is important in understanding the tendency of teacher candidates to make sacrifices regarding health and in terms of guiding future studies. The main problem of the research is "Is there a relationship between the altruism levels of teacher candidates and their blood donation attitude levels?" It was determined as. The following questions were also asked to the prospective teachers:

- Have you ever received information about blood donation?
- How many times have you donated blood in your life?
- Do you think that the education you received at the faculty contributed to your desire to donate blood?
- Have you ever needed a blood transfusion?
- Has anyone in your family or circle of friends ever needed a blood transfusion?
- Are you a member of any voluntary institution or organization?

Method

Design of The Research

This study is a research conducted in the "relational scanning" type, which is one of the subcategories of the general scanning model. A general survey model is a research method used to reach a general judgment by taking samples from an entire universe or a group within the universe (Karasar, 2000). The relational survey model is a research model that aims to determine the changes between two or more variables or the degree of these changes (Karasar, 1991). This research was conducted in a relational screening model to examine the relationship between teacher candidates' altruism levels and blood donation attitude levels.

Participants

This research was conducted with 204 teacher candidates aged 18-23, studying at the Faculty of Education at a state university in Türkiye. The research group was determined using the appropriate sampling method. Convenience sampling is a method that involves selecting individuals who are easily accessible, readily available, and willing to participate in the research (volunteer) (Christensen, Johnson & Turner, 2015). The sample group consists of 204 teacher candidates, 135 female and 69 male. Teacher candidates are studying in the Department of Mathematics and Science Education.

Data Collection Tools of The Research

In the study, data was collected using a data collection tool consisting of three parts. The first part includes questions that include demographic information, such as gender and family type of the participating teacher candidates, and questions prepared by the researchers by taking advantage of the literature and taking expert opinions. To teacher candidates, "Have you received information about blood donation before?" "How many times have you donated blood in your life?" "Do you think that the education you received at the faculty contributed to your desire to donate blood?" "Have you ever needed a blood transfusion before?" "Has anyone in your family or those around you ever needed a blood transfusion?" and "Are you a member of any volunteering institution/organization?" questions were asked.

The second part includes the "Blood Donation Attitude Scale" developed by Çelik & Güven (2015) to determine the participants' attitude levels towards blood donation. The scale consists of 24 items under the factors "social and social responsibility," "concern," and "social opinion and understanding," which measure attitudes towards blood donation. The scale was prepared in a 5-point Likert type, and the expressions in the scale are: Strongly Disagree, Disagree, Undecided, Agree, Strongly Agree. It was stated that the Cronbach Alpha reliability coefficient of the scale was 0.83.

The third section includes the "Altruism Attitude Scale," which was developed by Ümmet, Ekşi, & Otrar (2013) and consists of 38 items in order to determine the altruism levels of the participants. The scale consists of 7 factors:

"participation in voluntary activities," "financial aid," "assistance in traumatic situations," "assistance to the elderly/patients," "assistance based on physical strength," "assistance during the education process," and "assistance resulting from a sense of closeness.". The scale is structured as a 5-point Likert type, where 1 = I strongly disagree, 2 = I disagree, 3 = I am undecided, 4 = I agree, 5 = I completely agree, and the Cronbach Alpha reliability coefficient is expressed as 0.81.

Data Collection Process and Data Analysis

During the data collection process, scales were applied to 204 teacher candidates studying at the faculty of education at a state university in Türkiye in the 2022-2023 academic year. This application was carried out by the researchers in the classroom and took approximately 30 minutes. The data used in the study were analyzed with the SPSS 22.0 program. In order to evaluate the suitability of the scale scores for normal distribution, the Kolmogorov-Smirnov test was used for the "Blood Donation Attitude Scale" and the "Altruism Attitude Scale," and the skewness and kurtosis coefficients were examined, and it was determined that they met the normal distribution criteria.

In correlation analysis, the degree of relationship is expressed as the correlation coefficient (r) and can take values between -1 and +1. The absolute value of this coefficient indicates the strength of the existing relationship. Among the most commonly used correlation analyses in the literature are Pearson and Spearman correlations. While Pearson correlation analysis is used when the variables have a normal or near-normal distribution, Spearman correlation is preferred when the variables are far from normal (Bonett & Wright, 2000). Since the data showed a normal distribution, Pearson correlation analysis was performed to examine the relationship between altruism levels and attitudes towards blood donation. Frequency distribution, percentage calculations, and mean and standard deviation values were used in the analysis of the data.

Demographic questions were meticulously created by using relevant literature and expert opinions, thus ensuring the validity of the study. B In addition, high reliability coefficients such as the "Blood Donation Attitude Scale" (Cronbach Alpha: 0.83) and the "Sacrifice Attitude Scale" (Cronbach Alpha: 0.81) show that these scales provide solid and consistent measurements. These high reliability values increase the reliability of the measurement processes of the scales and support the accuracy of the data obtained.

Ethical Approval
Ethical permission (08.05.2024-58) was obtained from the Kafkas University Social and Human Sciences Scientific Research and Publication Ethics Committee institution for this research.

Results

In this section, the findings obtained within the scope of the research are presented and interpreted. Within the scope of the research, in the first part, the questions containing demographic information such as gender and family type of the participating teacher candidates and the data obtained from the questions prepared by the researchers by taking advantage of the literature and taking expert opinions were tabulated. (Table 1).

Table 1. Frequency and percentage values of the data obtained from the First Part of the Survey

		n	%
Gender	Female	135	66.2
	Male	69	33.8
Family Type	Nuclear family	149	73.0
	Extended family	53	26.0
	Broken Family	2	1.0
Have you ever received information about blood donation?	Yes	142	69.6
	No	62	30.4
How many times have you donated blood in your life?	None	121	59.3
	1-2	56	27.5
	3-5	22	10.8
	6 or more	5	2.5
Do you think that the education you received at the faculty contributed to your desire to donate blood?	Yes	99	48.5
	No	105	51.5
Have you ever needed a blood transfusion before?	Yes	14	6.9
	No	190	93.1

Has anyone in your family or circle ever needed a blood transfusion?	Yes	69	33.8
	No	135	66.2
Are you a member of any institution or organization that carries out voluntary activities?	Yes	31	15.2
	No	173	84.8

According to Table 1, it is seen that the majority of teacher candidates are women (66.2%), the majority of them have a nuclear family (73%), and a significant portion of them have previously received information about blood donation (69.6%). However, the majority of teacher candidates stated that they had never donated blood in their lives (59.3%), that they thought that the education they received at the faculty did not contribute to blood donation (51.5%), and that they had never needed a blood transfusion before (93.1%). They also stated that the majority of them did not need blood transfusion in their family or circle (66.2%) and were not members of any voluntary organization (84.8%).

Table 2. Descriptive statistics of the altruism attitude scale and blood donation attitude scale sub-dimensions

Blood Donation Attitude Scale	Mean±SD
Community and Social Responsibility	4,00 ± ,7588
Anxiety	3,03 ± ,7736
Social View and Understanding	2,80 ± ,9381
Blood Donation Attitude Average	3,48± ,5701
Altruism Attitude Scale	Mean±SD
Participation in Volunteer Activities	3,73± ,8388
Financial support	3,94± ,7955
Help in Traumatic Situations	4,11± ,8441
Helping the Elderly/Sick	4,10± ,8507
Physical Strength-Based Assistance	4,00± ,8071
Assistance in the Educational Process	3,99± ,8363
Help Derived from a Sense of Closeness	4,02± ,8746
Altruism Attitude Average	3,97± ,7379

When the averages of the Blood Donation Attitude Scale sub-dimensions presented in Table 2 were examined, it was found that the "Social and Social Responsibility" factor had the highest average value ($\bar{X}$ = 4.00). When the averages of the Altruism Attitude Scale sub-dimensions were examined, it was found that the "Help in Traumatic Situations" factor had the highest average value ($\bar{X}$ = 4.11). Additionally, it was determined that the Blood Donation Attitude Average ($\bar{X}$ = 3.48) and the Altruism Attitude Average ($\bar{X}$ = 3.97).

Table 3. Evaluation of the relationship between altruism and blood donation attitude scales and their sub-dimensions

	r/p Test Values	Community and Social Responsibility	Anxiety	Social View and Understanding	Blood Donation Attitude Average
Participation in Volunteer Activities	r	,610**	,114	,158*	,501**
	p	,000	,104	0,24	,000
Financial support	r	,709**	,217**	,189**	,622**
	p	,000	,002	,007	,000
Help in Traumatic Situations	r	,718**	,168*	,128	,589**
	p	,000	,016	,068	,000
Helping the Elderly/Sick	r	,706**	,138*	,143*	,572**
	p	,000	0,49	0,41	,000
Physical Strength-Based Assistance	r	,687**	,191*	,182**	,593**
	p	,000	,006	,009	,000

Assistance in the Educational Process	r	,733**	,224**	,154*	,631**
	p	,000	,001	,028	,000
Help Derived from a Sense of Closeness	r	,623**	,143*	,091	,504**
	p	,000	0,42	,197	,000
Altruism Attitude Average	r	,769**	,191**	,169*	,644**
	p	,000	,006	,016	,000

(**) The correlation is significant at the 0.01 level (2-Way).

Upon examining Table 3, a significant and positive relationship between altruism levels and blood donation attitudes is observed. This relationship reached a correlation coefficient of r=0.644** and was found to be statistically significant with p<0.001. This shows that as the level of altruism increases, blood donation attitudes also change positively. Furthermore, it is indicated that this relationship is of medium statistical strength.

Conclusion, Discussion, and Recommendations

Blood is of vital importance as it is an indispensable element for the continuation of life and an alternative treatment tool. For this reason, raising awareness about blood donation and developing policies regarding this is a constantly current issue in modern societies (Düzgüner, 2013). Voluntary and unpaid donors stand out as valuable resources for society, and they provide the majority of donations (Fernández-Montoya, 1997). The relationship between blood donation and altruism has significant effects on the health and well-being of both individuals and society. Based on this, the aim of this research is to understand the relationship between teacher candidates' altruism levels and blood donation attitudes.

When the results obtained from the research are examined, it is noted that the level of awareness about blood donation is generally low and participation in volunteer activities is limited. Data obtained from the current study may provide important clues in the development of targeted strategies and policies to increase awareness and participation in blood donation. The fact that the majority of the participants have never needed a blood transfusion before (93.1%) and that such needs are rare in their surroundings (66.2%) shows that the level of sensitivity on this issue is low. As a matter of fact, Yıldız et al. (2006) stated that the two biggest obstacles to blood donation are misinformation and social insensitivity. Yıldız et al. (2006) determined that people avoid donating blood due to hearsay information such as donating blood has side effects, causes weight gain, causes weight loss, causes addiction, transmits diseases, and causes anemia. Blood donation awareness varies according to countries and cultures. Compared to developed countries, our country ranks very low in blood donation due to the insufficient number of volunteer blood donors. Considering that the population of our country increases by an average of 1 million every year (www.worldometers), there is a great need for the number of blood donors to gradually increase.

It is noteworthy that the majority of teacher candidates are women and have a nuclear family structure. This demographic information reveals the social structure of the sample group and the family dynamics that could potentially affect altruistic behaviors. On the other hand, the fact that the majority of teacher candidates stated that they had never donated blood in their lives indicates that their attitudes and behaviors towards blood donation need to be improved. In addition, the fact that they stated that they thought their education did not contribute to blood donation reveals that the curriculum did not focus enough on this issue or that students did not obtain sufficient information and motivation on this issue. The fact that they stated that they did not need a blood transfusion and that there were people around them who did not experience this situation may be among the factors that reduce individuals' sensitivity to blood donation. In addition, the fact that the majority of teacher candidates stated that they were not members of any voluntary organization indicates that there is a deficiency in terms of developing social responsibility and volunteering awareness. As a result, it reveals the lack of knowledge of teacher candidates about blood donation and the necessity of education and awareness programs to increase their social sensitivity.

Another result obtained from the study is that there are notable differences in the sub-dimensions of the Blood Donation Attitude Scale and the Altruism Attitude Scale. The fact that the "Social and Social Responsibility" factor has the highest mean value ($\bar{X}$ = 4.00) shows that teacher candidates have a sense of responsibility, while the "Help in Traumatic Situations" factor has the highest mean value ($\bar{X}$ = 4.11). It reflects sensitivity to emergencies and tendencies to help. Regarding this issue, Steele et al. (2008) stated that the majority of donors are highly empathetic and altruistic people who donate out of social responsibility. This situation suggests that the concepts

of social responsibility and helpfulness have an important place in the educational processes of teacher candidates. As a result, the high social responsibility and sensitivity to traumatic situations of teacher candidates can be evaluated as both a reflection of their educational processes and an indicator of their acceptance of their future roles and responsibilities. These findings emphasize the importance of programs and activities aimed at increasing the social sensitivity of teacher candidates.

Looking at Table 3, it can be seen that there is a significant relationship between the altruism level of teacher candidates and their blood donation attitude. This result obtained from the research shows that this statistically significant relationship increases positively with the increase in the level of altruism. This finding is also supported by similar studies in the literature. For example, Piliavin & Charng (1990) determined that blood donors were more altruistic than those who never donated blood. Yılmaz (2022) stated that there is a significant and positive relationship between altruism and donation intention. Koca (2003) stated that there is a positive relationship between blood donation attitude and altruism attitude. Therefore, it can be concluded that such socially beneficial behaviors can be encouraged and disseminated by increasing the level of altruism, especially in society-oriented professions such as education. As a matter of fact, Hablemitoğlu et al. (2010) reported that teachers who donate blood are more likely to donate blood than those who do not donate blood. They give directions to strangers, hold the elevator for a stranger, give way in traffic, give money to people asking for help, help people they don't know carry loads such as packages, donate to charities, lend valuable belongings to their neighbors, and voluntarily take care of their neighbors' pets without expecting anything in return. They determined that they helped the elderly or disabled people while crossing the street. Alessandrini (2007) stated that altruism is an element that enables people to continue donating blood. Kılınç (2019) stated that science teacher candidates' attitude levels towards blood donation are high.

As a result, with the increase in the sense of social goodness and solidarity, important social responsibilities such as blood donation can be fulfilled more effectively. According to the Theory of Reasoned Action put forward by Fishbein & Ajzen (1975), individuals behave by taking into account the returns they will provide. Based on this, the benefits of donating blood should be explained to students, especially in the education system. Because research shows that blood donation renews blood cells; It reduces stress, headache, cancer risk, heart disease, and heart attack; it shows that it regulates blood pressure and cholesterol (URL 1). The body produces new ones as much as the given amount. The thought of helping at least three patients with one unit of blood makes the donor psychologically happy (URL 2). Every time the donor donates blood, he or she undergoes screenings such as HIV, hepatitis B-C, and syphilis, and thus a kind of check-up (Altındiş et al., 2019). In addition, based on the results of this research, prospective teachers can be offered opportunities where they can mentor or be a role model in altruism. By organizing blood donation campaigns and activities related to altruism, students can be encouraged to take a more active role in these issues.

Author (s) Contribution Rate
All authors contributed equally.

Ethical Approval
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