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Are future doctors ready to donate blood and encourage blood donation?

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ABSTRACT

Background: Blood donation is the most common method of supplying blood. For maintaining the reliability of the blood supply through donation, the blood should be provided by voluntary, non-profit and regularly donating individuals. It is critical to be aware of the attitudes, behaviors and knowledge levels of the doctors about this issue who will inform and lead people to donate blood. The aim of this study was to determine the current knowledge levels, attitudes, and behaviors of the medical faculty students, who will be future doctors, on blood donation and to investigate whether a change occurs in the these parameters with the initiation of clinical education and training.

Method: This descriptive study was conducted by using a questionnaire including a total of 40 questions about blood donation. Chi-square and Mann-Whitney U tests were performed.

Results: The study included 120 students in the third year of the faculty, which is the last preclinical year, and 100 students in the fifth year, which is the second year of clinical education. Of the students, 44.1% were trained for blood donation. The rates of blood donation and promoting people to donate blood were significantly higher in students who had received blood donation training compared to those who had not received such training. Willingness to donate blood and the knowledge levels regarding blood donation were significantly greater among the fifth year students.

Conclusion: Efforts for raising the awareness of blood donation together with its training should be increased and popularized in medical faculties.

1. Introduction

Blood transfusion is used in surgical interventions, pregnancy-related complications, massive traumas, bleeding and various hematological disorders. Voluntary and regular donations without payment are needed for reliability of the supplied blood. According to the 2012 data, the voluntary blood donation among total donations reached up to 100% in 60 countries, whereas the donation rate was lower than 50% in 72 countries. The rate of blood donation was nine-fold higher in high-income countries when compared to low-income countries. There are approximately 10.000 blood donation centers worldwide and about 15,000 donations per center are provided each year in high-income countries and 3100 donations in middle and low-income countries [1]. While the presence of HIV, HBV, HCV and syphilis should be investigated in the donated blood, at least one of these tests cannot be utilized in 41 countries [2]. Therefore, blood transfusion should not be performed if not necessary, and the indications should be followed. Screening for these infectious diseases in donated blood is conducted by Turkish Red Crescent in Turkey. According to the data of Turkish Red Crescent, 1.860.257 units of blood were donated in 2014. Based on these data, the voluntary donation was obtained from approximately 2.5% of the Turkish population [3]. In developed countries, the rate of the blood donation is 5%, to which Turkey should also reach. The impacts of misinformation and prejudice on the low voluntary blood donation rate are high. Misinformation concerning the side effects of blood donation such as weight gain or loss and losing blood at such a level to lead to the deterioration of health decreases the rate of the blood donations [4–7]. The rate of blood donation can be increased with education and by raising the awareness [8–10]. The efforts of doctors are of paramount importance in informing the community, campaigns, and prevention of such misinformation and prejudice. However, studies conducted in Thailand, Turkey and India have demonstrated that doctors and medical students also had false information about that blood donation would lead to disease transmission and donation might have side effects, thus leading to low donation rates [11–13]. The attitudes, behaviors, and misinformation of doctors who have to guide society for blood donation should be determined, and then, doctors should be trained about the issues regarding blood donation that they have misinformation together with the importance of donation. The aim of this study was to determine current knowledge

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levels, attitudes, and behaviors of the medical faculty students, who will be doctors in the future, for blood donation and to investigate whether any changes occur in the knowledge levels, attitudes and behaviors with the initiation of clinical education and training.

2. Material & methods

This study was designed as a cross-sectional research and was conducted in the 2015–2016 academic year. Adnan Menderes University Non-invasive Interventional Ethics Committee had approved the study which was carried out in Aydin province, localized in the South Aegean region. The universe of the survey consisted of Adnan Menderes University Medical Faculty students attending the third and fifth years (phases) (Phase 5: 164 persons, Phase 3: 173 persons). The inclusion criteria were volunteering to participate and being a Phase 3 or Phase 5 student in the Medical Faculty. Phase 3 students are pre-clinical, Phase 5 students are clinical students. Students are educated about blood donation and transfusion as a part of their internal medicine and pediatrics theoretical training.

The participants were asked to answer 40 questions. The first 15 questions included sociodemographic aspects together with the attitudes and behaviors regarding blood donation. The remaining 25 questions were prepared by searching through the “Blood Donors Information and Questioning Form,” the “National Blood and Blood Components Guide” [14]of Turkish Red Crescent and the relevant literature.

Statistical analysis of the replies given to the questions in this study was performed utilizing (SPSS 19.0 IBM Corp.) software. Chi-square test was used to analyze the relationship of the presence of blood donation training and the phase of Medical Faculty, which are independent variables, with the other categorical parameters. Since the scoring data of replies to the knowledge questions did not comply with a normal distribution, these variables were analyzed with Mann-Whitney U test. The scoring was made by assigning “1” point to each correct answer and “0” point to each wrong answers or “don’t know” response. Linear regression analysis was used to adjust for all potential confounders simultaneously. Type I error set as 0.05.

3. Results

The rate of participation in the study was 70% in Phase 3 and 61% in Phase 5 students. In this study, 47.7% of 220 included students attending the medical faculty located in Aydin province were male, 52.3% female; 98.6% knew their blood groups and 44.1% had been educated for blood donation. The personal and blood donation characteristics of the students according to being a Phase 3 or Phase 5 student were shown in Table 1.

Of students, 35.9% had previously donated blood at least once, with 13.6% of them being regular donors, whereas 22.3% had donated blood when required. Of 141 students who had never donated blood, 85.8% stated their willingness to donate blood. Among all students who had not donated blood, the most common two causes for this were having an health problem as an obstacle to donation or having no opportunity/time for donation (Table 2).

The students were requested to reply to the 25 questions prepared by searching through the Turkish Red Crescent blood donation form as “Yes,” “No,” or “Don’t know.” Distribution of the replies of the students to the knowledge questions regarding blood donation was shown in Table 3. The most common correct answer was “Substance abuse is a barrier to blood donation” with 192 correct answers.

The students were scored over their replies to the knowledge questions. The correct answers were scored as “1” and wrong or “don’t know” answers as “0” point. The scores of the students were then evaluated according to their school phases and status of being educated about blood donation (Table 4). When the Phase 5 and Phase 3 students were compared regarding the scores obtained by the correct replies to the knowledge questions, the knowledge level of Phase 5 student group regarding blood donation (median 11) was statistically significantly higher than the Phase 3 student group (median 10.5) (U:5048.0, Z:-2.03, p: 0.04). Of the students, 65.5% were found to encourage people around them for blood donation, and 80.9% were determined to follow the announcements of the need for blood donation where they were present.

When the data were detailed for analyzing the students’ level of promoting blood donation, blood donation and encouragement of people around them for the donation were found to be higher in the students who had been educated for blood donation compared to those who had not been educated with this purpose. The rate of willingness to donate blood was statistically significantly higher in Phase 5 students when compared to Phase 3 students. The individuals whose relatives or themselves had received transfusions were more willing to donate blood (Table 5).

Being educated about blood donation, being phase 5 student and having a blood donation history slightly effect blood donation knowledge (respectively OR = 0.09, 95% CI = 0.03–0.15; OR: 0.07, 95% CI = 0.01–0.13; OR = 0.06, 95% CI = 0.01—0.12), yet, the association remained statistically significant. R^2 value was 0.087 for study models, suggesting that students phase, having blood donation education and blood donation history did not explain the major fraction of variability in the odds of knowledge about blood donation.

Table 1
Personal and Blood Donation Characteristics of Phase 3 and 5 students of Adnan Menderes University, Medical Faculty, Aydin 2015.

Characteristics of the students	Phase 3 (n = 120)	Phase 5 (n = 100)
Gender	n (%)	n (%)
Female	58 (48.3)	57 (57)
Male	62 (51.7)	43 (43)
Blood Donation Status		
Yes	47 (39.2)	32 (32)
No	73 (60.8)	68 (68)
Willingness to Donate Blood		
Yes	103 (85.8)	94 (94)
No	17 (14.2)	6 (6)
Education about Blood Donation		
Yes	50 (41.7)	47 (47)
No	70 (58.3)	53 (53)
Being Aware of his/her blood group		
Yes	117 (97.5)	100 (100)
No	3 (2.5)	0 (0)
Any Blood Transfusion to himself/ herself or his/her Relatives		
Yes	32 (26.7)	28 (28)
No	88 (73.3)	72 (72)
Encouragement of people around him/ her for Blood Transfusion		
Yes	76 (63.3)	68 (68)
No	44 (36.7)	32 (32)

Table 2
The Distribution of the Causes for not donating blood among the students of the Phases 3 and 5 Adnan Menderes University, Medical Faculty, Aydin, 2015.

Cause	Frequency (n = 115[a])
Having an obstacle to blood donation (health problems)	49
Having no opportunity/time	43
Thinking that it is not necessary	9
Absence of need for donation	4
Needle phobia	4
Lack of confidence in the relevant institution	3
Lack of interest	2
Fear of disease transmission	1

[a] 29 participants did not want to explain the cause.