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## Knowledge, Attitudes, and Barriers of Blood Donation among Students of Soran Technical College: A Cross-Sectional Study

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### ABSTRACT

**Background:** Safe and effective blood transfusion is a vital component in improving health and preventing the spread of blood-borne diseases worldwide. The current study aimed to assess knowledge, attitudes, and barriers toward blood donation among Soran technical college students.

**Methods:** A cross-sectional study was conducted from 25th February 2022 to 7th May 2022. A non-probability convenience sampling method included 200 students; it was divided into medical and non-medical students. A self-administered questionnaire with closed-ended questions was used to collect information concerning socio-demographic characteristics, knowledge, attitude, and practice regarding blood donation.

**Results:** More than half of the study samples (59.5%) were within the age group of less than 20 years. The majority (68%) were female. And nearly half of the students came from an urban area. The majority of respondents (90.5%) had a fair level of knowledge, while 7% had good knowledge of blood donation. However, 59% of the students had a positive attitude toward blood donation. The most common motivators that encouraged blood donors were 72.5% getting subsidies and vacations, and 71% getting free laboratory examinations. Common barriers for blood donors were worried about sanitation and getting infectious diseases, and the side effects (58.7%) and (54.5%), respectively.

**Conclusion:** Despite most of the students having a favorable attitude toward blood donation but unexpectedly having a fair level of knowledge, the major barrier perceived by students was fear of acquiring an infectious disease.

**Keywords:** Knowledge; Blood donation; Barriers; University Students.

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## INTRODUCTION

Human blood is a vital component of life, and there are currently no substitutes for blood components. The donation of blood or blood products into the recipient's bloodstream is known as a blood transfusion. Replacing blood cells or blood products lost by bleeding with accident injuries, surgical conditions, malignancies, pregnancy issues, or other medical disorders is a life-saving strategy in both normal and emergencies (1). An essential part of enhancing healthcare delivery and halting the global spread of blood-borne infections is safe and effective blood transfusion. Even though blood transfusions save millions of lives each year, there is considerable interest in the quality and safety of this procedure, particularly in hospitals in developing nations (2). According to the World Health Organization, 3-5% of people should donate blood annually (3). When blood is divided into its parts, one unit (450 mL) that is donated has the potential to save at least three lives. Global efforts are ongoing to maintain an adequate number of blood donors to assure a sufficient, safe, and timely blood supply that is adequate to fulfill clinical demand. (4,5). Due to the increase in chronic illnesses, surgeries, traumas, cancers, and automobile accidents, fresh blood is urgently needed, particularly during the first 24 hours of therapy (6). Although it is believed that 60% of people in developing nations have sufficient knowledge about blood donation, the blood donation rate in low-income countries is far lower than that of middle- and high-income countries. Due to misconceptions, inadequate information, and a negative attitude toward donation, the blood donation percentage was less than desirable. Additionally, it was discovered that sex, age, and educational status were predictors of voluntarily giving blood (7).

Young people represent a significant portion of the population and represent the future and present sources of a safe blood supply (1). University students, who may make up a larger share of the young population and are healthy, active, dynamic, resourceful, and receptive, need to be inspired, motivated and urged to donate blood willingly. Students studying health sciences can become future blood donors as well as community role models and motivators if the right techniques are created and put into practice to enhance knowledge and attitude. Therefore, the study aimed to assess knowledge, attitudes, and barriers toward blood donation among Soran Technical College students.

## METHODS

A descriptive cross-sectional study was conducted from 25th February 2022 to 7th May 2022. A non-probability convenience sampling procedure was used to select 200 students, medical and non-medical students from Soran Technical College. Previously informed consent was obtained for the conduction of the study. The researcher used relevant English-language literature reviews to create the questionnaire, which was then translated into Kurdish and completed by the students in 15-20 minutes. A self-administered questionnaire consists of socio-demographic data (age, gender, residency, department, etc.). Knowledge of the student was measured with 19 questions that were rated by three options (poor, fair, and good) which gave two scores for the correct question, a score of 1 for the correct answer, and a score of 0 for incorrect responses. The sum of the score for all 19 items was calculated as the total knowledge score on blood donation, which ranged from 0 to 19. Scoring was categorized as poor knowledge 0-5, fair knowledge 6- 12, and good knowledge 13-19. Student's attitude toward

blood donation was measured by 12 questions with two responses of (agree=1 score, disagree=0 score), the total scores were categorized as negative attitude (0-6) and positive attitude (7-12). And finally, statements related to reasons and barriers of blood donation with 2 responses yes (agree) and no (disagree). Part one reasons for blood donation (5 statements) and the second is the barrier to blood donation (6 statements). The study has been approved by Soran Technical College and the scientific committee of Akre Technical Institute. The data was entered into Statistical Package for Science Services (SPSS version 25), Descriptive statistical analyses were used to report frequencies with percentages for categorical variables. While for figures Excel and SPSS have been used.

## RESULTS

The result shows that the majority (59.5%) of study samples were within the age group of less than 20 years and the highest percentage (68%) of them were female while (32%) of them were male. The highest percentage (48.5%) of the study sample was from urban and 28% from rural. It is clear from this table that most (64%) of the study participants were in the second stage and Less than half percentage (41%) of them had O+ blood group and Rh-positive while (2.5%) of them had A- blood group and Rh-negative as shown in Table 1.

**Table 1.** Distribution of study sample according to socio-demographic characteristics (N=200)

Variable	No. (%)
<b>Age group</b>	
20>years	119(59.5)
24-20years	76(38)
24<years	5(2.5)
<b>Gender</b>	
Male	64(32)
Female	136(68)
<b>Residency</b>	
Urban	97(48.5)
Suburban	47(23.5)
Rural	56(28)
<b>Stage</b>	
First	72(36)
Second	128(64)
<b>Blood group&amp; Rh</b>	
A+	68(34)
B+	26(13)
O+	82(41)
A-	5(2.5)
B-	7(3.5)
O-	12(6)
<b>Total</b>	<b>200</b>

The Figure 1. Shown highest percentage (90.5%) of study samples had a fair level of knowledge about blood donation and only (7%), (2.5%) of them had good and poor levels of knowledge respectively.

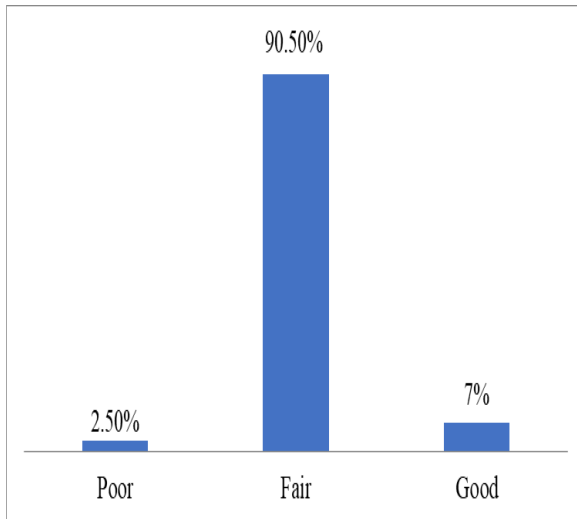


Figure 1. Distribution of study sample regarding the level of knowledge about blood donation.

The majority (59.5%) of study samples had a positive attitude toward blood donation while (40.5%) of them had a negative attitude as shown in Table 2.

**Table 2.** Distribution of study sample regarding attitude toward blood donation

Attitudes	N (%)
Positive	119(59.5)
Negative	81(40.5)

Receiving a subsidy and having free tests were the main reasons for donating blood, accounting for 72.5% and 71%, respectively. While (43%) cited receiving souvenirs as a motivation for giving blood. Additionally, (65%), (63%) of the study's participants said that giving blood is beneficial to one's health and useful for using blood in therapeutic settings, respectively Figure 2.

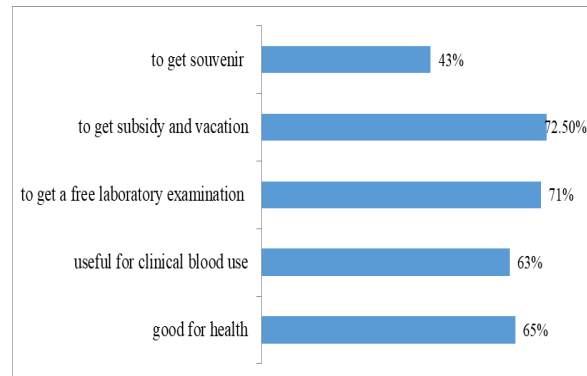


Figure 2. Distribution of study samples regarding the reason for blood donation.

Most of the students (58.5%) reported that worries about sanitation and getting infectious diseases were the main barrier to blood donation. While only (21.5%) of them mentioned opposition from family as a barrier to blood donation. In addition, (54.5%), and (42%) of study students declared that blood donation would affect health and that no time for blood donation was a barrier to blood donation respectively Table 3.

**Table 3.** Distribution of study sample regarding barriers to blood donation.

Barriers	N (%)
No time for blood donation	84(42)
Opposition from family	43(21.5)
Fear of needle pain	81(40.5)
Worry about sanitation and getting an infectious disease	117(58.5)
Blood donation would affect health	109(54.5)
I do not be fit to donate blood	58(29)

## DISCUSSION

Maintaining a sufficient and secure blood supply is an essential matter that worries health planners, Particularly, because of the rise in demand. Therefore, recognizing knowledge, attitudes, and barriers associated with blood donation customs are crucial (8). The study results illustrated that students had poor (7%) knowledge regarding blood donation. This finding was lower than studies in Thailand and Ethiopia (80%), (79.4%) respectively (9, 10). Also, our students had lower knowledge than medical students in Kollam, Kerala (35%) (11). On the other hand, it is nearly in line with studies done among health Science students of Manipur (9%) (12). This variance may be the result of students' limited access to blood donation education programs and differences in socio-demographic characteristics, this wide gap should be minimized. In this study, about (59.5%) of the study participants had a positive attitude toward blood donation. This finding is in agreement with studies conducted in Iraq (68.7%) (13), (67.9) among university students in Pakistan (14), and In Ethiopia (57.8%) of the study participants had positive attitudes (15). Also, it is higher than that reported among students in Pakistan (42%) (16), and Ambo University students in Ethiopia (47.4%) (17). this distinction may come as a result of the studying populations' instructional characteristics and sociocultural contrasts (18). In the present study, the main barrier was the fear of being infected with an infectious disease and the consequences of blood donation. Comparable to a study conducted in Nepal, the main reason was fear of weakness and not being asked to donate blood (8). On the other hand, other factors were more common in other nations (11). In addition, a study done in Pakistan showed

similar factors in fear of infectious disease and not being fit to donate blood (19) and in Qatar (20).

## Conclusion

Inadequate knowledge was prevalent among a vast majority of university students in Soran while the majority of study samples had a positive attitude toward blood donation. The primary motivation for donating blood was to receive benefits like subsidies, vacation days, and free laboratory tests. Additionally, the greatest barrier to refusing blood donation was the fear of acquiring an infectious disease and its adverse outcomes. The findings suggest that providing workshops and lectures about blood donation for students to increase their level of knowledge, attitude, and practice about blood donation.

## CONFLICT OF INTEREST

The author reports no conflict of interest.

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