
**“KNOWLEDGE, ATTITUDE AND
PRACTICES REGARDING VOLUNTARY
BLOOD DONATION AMONG
ENGINEERING STUDENTS IN BELAGAVI”.**

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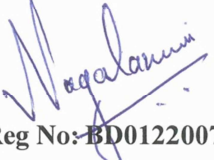
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LIST OF ABBREVIATIONS USED

SL. NO.	ABBREVIATION	EXPANSION OF THE ABBREVIATION
1	VBD	Voluntary Blood Donation
2	WHO	World Health Organization
3	NACO	National AIDS Control Organization
4	NBP	National Blood Policy
5	KAP	Knowledge, Attitude and Practices
6	VBNRD	Voluntary, Non-Remunerated Blood Donation
7	KAHER	KLE Academy of Higher Education and Research
8	B.E	Bachelor of Engineering
9	SD	Standard Deviation
10	SPSS	Statistical Package for Social Science
11	AI	Artificial Intelligence
12	ml	Millilitre
13	kgs	Kilograms
14	OPD	Out Patient Department
15	ICU	Intensive Care Unit

ABSTRACT

“KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING VOLUNTARY BLOOD DONATION AMONG ENGINEERING STUDENTS IN BELAGAVI”

Background: Human blood and blood products are vital, unique, life saving components, capable of saving millions of life, if ready availability is ensured. In India, the demand for blood outweighs its supply, requiring more Voluntary Blood Donation (VBD.) In addition to limited supply of blood, the issue of safe blood exists in the developing countries. Blood procured from Voluntary Non-remunerated donors is the safest source of blood. In South East Asia, the estimated blood requirement is 18 million units per year and the annual collection is about 9.4 million units, which leaves a gap of 6 million units. One of the potential sources for VBD can be recruited from the young college going students who are healthy and fit to donate blood voluntarily. To inspire the young college students to fill the demand and supply gap for safe blood and blood components, understanding the attitude of young people towards blood donation is crucial.

Not many studies on Knowledge, Attitude and Practices (KAP) regarding VBD have been done among engineering students.

Hence this study is undertaken to assess KAP regarding VBD among engineering students in Belagavi. And to study the factors influencing voluntary blood donation among the study population.

Objectives: 1. To Assess Knowledge, Attitude and Practices regarding Voluntary Blood Donation among Engineering Students in Belagavi.

2. To study the factors influencing Voluntary Blood Donation among the study population

Methods: A cross-sectional study was conducted among engineering students pursuing their B.E degree from four selected colleges, Maratha Mandal Engineering College, S G Balekundri Institute of Technology, Jain College of Engineering, KLE Dr. M S Sheshgiri College of Engineering and Technology from 1st April 2023 to 31st March 2024. Simple random sampling was used for selection of students for data collection. A pre-designed pre-tested questionnaire was used to collect data. Data collected was coded and entered in MS Excel sheet. Multiple linear regression was carried out to find the influence of various factors on knowledge, attitude and practices. Co-relation was carried out between knowledge and attitude, knowledge and practice and attitude and practice.

Results: The mean age of the study participants was 20.19 ± 1.41 . Majority of the study participants, 55.87% were males. 15.6% of the study participants had good knowledge, 63.37% of the study participants had a positive attitude and 61.37% of the study participants had a favourable practice. Females, students aged ≥ 21 years, students from Computer science, Electronic and Communication, Mechanical and (Electrical or AI or Chemical) branches, participants with known blood groups (O, A, B, AB), students in the 1st and 2nd years had higher knowledge scores. Females, students aged ≥ 21 years, students from nuclear families, participants with known blood groups (O, A, B, AB), students in the 1st and 2nd years, students from Computer science, Electronic and Communication, Mechanical and (Electrical or AI or Chemical) branches, had higher attitude scores. Individuals from Joint or Three Generation families, participants with known blood groups (O, B), students in the 1st year and 3rd year had higher practice scores. There was a moderate positive

correlation between knowledge and attitude. In comparison, there was a weak positive correlation between knowledge and practice and there was a weak positive correlation between attitude and practice.

Conclusion: In this study, majority of the students had moderate knowledge regarding blood donation, which could be because the study participants are engineering students and blood donation is not a part of their routine curriculum. Majority of the students had positive attitude regarding blood donation and majority of the students had favorable practice regarding blood donation, which is a positive finding.

Keywords: Knowledge, Attitude, Practices, Voluntary Blood Donation, Engineering Students

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INTRODUCTION

INTRODUCTION

Blood is a natural human product that cannot be manufactured artificially. Human blood and blood products are vital, unique, life saving components capable of saving millions of lives if ready availability is ensured.¹

According to World Health Organization (WHO), at least 1% of the Nation's total population should donate blood voluntarily to meet the most basic requirements for blood and blood products.²

In India, the need for blood outweighs its supply.³

In addition to limited supply of blood, the issue of safe blood exists in the developing countries. Safe blood is necessary to prevent infectious diseases being transmitted from one person to another. Blood procured from Voluntary Non-remunerated donors is the safest source of blood. Hence the WHO has adopted a policy to aim at 100% voluntary, non-remunerated donor blood procurement.⁴

In South East Asia, the amount of blood that is required is 18 million units every year and every year about 9.4 million units are collected, which leaves a gap of 6 million units. Hence it is necessary to bridge the gap between requirement and availability from variety of sources.⁵

The tremendous advancement in the field of medicine over the past ten years has revolutionised the treatment of serious illness and injuries, and it has led to an increase in the necessity of blood transfusion for patient's survival, to support them through the recovery and in maintaining their health.⁶

The constant demand of blood exists always for various conditions like hematological disorders, cancer therapy, accidents, surgeries and pregnancies. The necessity of blood and blood components is constantly on the rise throughout the world.⁷

The need for blood may occur at any time, the unavailability of blood has led to the death of many patients in need of blood transfusion.⁶

In India, the percentage of blood collected by Voluntary Blood Donation (VBD) at National AIDS Control Organisation (NACO) supported blood banks was 84.3% in 2012.⁸

Government of India has adopted the National Blood Policy (NBP), which aims to provide easily accessible, adequate, safe and quality blood and blood products which are collected from a voluntary blood donor.²

Internationally, blood donated by regular voluntary non-remunerated donors, who donate blood out of altruism is considered safe and in many countries continuous efforts need to be put in order to achieve 100% voluntary blood donations.⁹

The Indian Law has forbidden the collection of blood by people for payment. Still healthcare facilities are compelled to receive blood through paid donation due to the shortage of donors. It is well known that the paid donors constitute a group with high-risk behaviours which leads to a rise in the transfusion transmitted infections in the recipients.⁹

According to the WHO, an estimated 38% of reported voluntary blood donations are contributed by under 25 years of age people.⁹

In health-care settings, there is frequent blood scarcity due to an imbalance between increasing demand for safe blood and blood products on one hand and failure to organize regular supply of safe blood, attributable to misconceptions, perceived risks and harms, and lack of knowledge and motivation among potential donors.¹⁰

An integrated strategy for blood safety can help eliminate or significantly reduce the global burden of diseases resulting from unsafe blood transfusion.¹¹

The primary component to enhance VBD is to have an integrated network of voluntary blood donors.⁷

Every year on 14th June, World Blood Donor Day is celebrated, which commemorates the importance of safe blood and blood components. Also for expressing gratitude to the donors for their blood donations. An important source for VBD can be recruited from the young college students who are healthy and fit to donate blood voluntarily. They can help to meet the increasing demands of safe and quality blood.⁸

A greater proportion among people are young students who are healthy, active, dynamic, resourceful and receptive, hence they can be recruited for VBD.¹²

The students are quick to respond to emergency calls for blood requirements, particularly for rare blood groups. In addition, regular VBD has certain medical benefits. Acute myocardial infarction is less likely to occur due to VBD. VBD can help improve the glucose balance in the body by reducing insulin resistance and increasing insulin sensitivity.¹³

Researching various aspects of human behaviour can be achieved through Knowledge, Attitude, and Practice (KAP) studies, which are commonly used tools.

By assessing what individuals know (knowledge), how they feel about it (attitude), and how they actually use their knowledge and attitude (practice), the investigator is capable of gaining a better understanding of the people's behaviour and suggesting solutions.¹⁰

The NBP's eighth objective calls for the use of KAP studies to obtain accurate information through operational research on blood donation in order to achieve the first objective of the NBP, the government's commitment in providing blood that is both safe and adequate.¹⁴

Based on a review of KAP studies, the authors concluded that KAP studies in developing countries provide information on strategies that can be formulated to sustain VBD.¹⁴

To inspire the young college students to fill the demand and supply gap of safe blood, understanding the attitude of young people towards blood donation is crucial. By learning about the knowledge gaps of the college students, it is possible to bridge those gaps with proper information, which in turn increases VBD.¹⁵

Not many studies on KAP regarding VBD have been done among engineering students.

Therefore this study was undertaken to assess KAP regarding VBD among engineering students in Belagavi. And to study the factors influencing VBD among the study population.

OBJECTIVES

1. To Assess Knowledge, Attitude and Practices regarding Voluntary Blood Donation among Engineering Students in Belagavi.
2. To study the factors influencing Voluntary Blood Donation among the study population.

REVIEW OF LITERATURE

A cross sectional study was done by Lekha Bharadwaj et. al, in 2018, among 250 students. The students were 2nd year medical and engineering students in Kanakapura, Karnataka. A structured questionnaire was used to collect the data. Out of 250 students surveyed, 125 were from a medical college and 125 from an engineering college. The study revealed an overall positive attitude towards overcoming inhibitions in both the groups. A higher number of non-medical students stated a lack of information as the main barrier for non donation. The study concluded that key factors preventing the students from donating blood were perceptions of being unfit to donate, fear of becoming anaemic, concerns about health risks after donating blood, and insufficient knowledge about where, when, and how to donate. Therefore, it is recommended to provide proper education, motivation, and guidance to students to encourage blood donation.¹

A study was carried out by Ronald J Bosco et. al, in Tamil Nadu, which was cross sectional, in the year August 2016 among 500 engineering college students. A pre-tested, semi-structured questionnaire was used to collect the data. The findings showed that the participants had good awareness of the minimum age required for blood donation (82%), the minimum weight required for blood donation (69.6%), and the recommended donation (84%). However, the participants lacked in knowledge regarding the maximum age for donation (26%) and the minimum hemoglobin required for blood donation (26.6%). Only 20.8% ever donated blood, with fear stated as the barrier for non donation (79.6%). The study concluded that it is required to properly motivate the students to enhance donation by them, as they represent a valuable pool of potential voluntary blood donors.²

A study was conducted by Rajiv Yeravdekar et. al, which was cross sectional, among students from higher educational institutions between January and May 2018. A pre-designed, pre-tested, semi-structured questionnaire was used for collecting the data. The results revealed that overall awareness of donation was higher among the male participants. Among the respondents, 2,592 students (35.6%) had donated one time, while 4,689 (64.4%) had never donated blood. Among those students who had never donated blood, 1,841 students (39.3%) gave the reason as a lack of opportunity, and 1,630 (34.7%) gave the reason as insufficient information for not donating blood. The study concluded that in order to increase the blood donation rates, regulatory bodies should develop a national policy focused on the recruitment and retention of voluntary blood donors, aiming to shift the culture from replacement donations to voluntary donations.³

A descriptive study was conducted by Dnyanesh Limaye et. al in May – June 2017, among students from Mumbai University, India. The study participants were 201 students, consisting of 104 males (52%) and 97 females (48%).. Findings from the knowledge section revealed that the students had limited awareness about VBD. However, the students had a positive attitude about VBD. 191 (95%) stated it a noble act and 199 (99%) stated its potential to save lives. The study concluded that while students had a favourable attitude about VBD, there is a significant need to increase their knowledge on the subject.⁴

A study was done by Jiwan Singh Meena et al, which was cross-sectional, among 500 college students from Gandhi Medical College and TIT Engineering College in Bhopal, Madhya Pradesh, between July 2017 and December 2017. A well-structured, validated, and pre-tested questionnaire was used to collect data. The findings revealed that knowledge related to blood donation improved from 28.9% in

the pre-intervention phase to 52.6% in the post-intervention phase. The majority of students (61.0%) had never donated blood, while 22% had donated once, 10% had donated 2-3 times, and only 5% donated on an annual basis. The study concluded that the main reason hindering students from donation was lack of information, signifying the need for periodic awareness programs for enhancing donation among the students.⁵

A study was done by Naga Kalyani Pathuri et. al, which was cross-sectional, in Telangana. 350 students each from a medical and an engineering were selected for the study. A pre-formed, pre-tested questionnaire was used for collecting the data. Maximum had never donated blood, 89.5% from medical students and 95% from engineering students. 23% of medical students and 22.56% of engineering students showed a negative attitude toward blood donation. The study concluded that similar studies should be done across Telangana to get deeper insight of this socially significant issue. If the findings align with the current study, immediate interventional and corrective measures have to be implemented.⁶

A study was done by M Kanmani Devi et. al, which was cross-sectional, in Tamil Nadu, among engineering college students aged 19 to 23 years in 2019. The students were given a three-part questionnaire for collecting data. The findings showed KAP scores of 96%, 86%, and 76%, respectively. The study concluded that there is a noticeable gap between attitude and practice, among the students which can be due to insufficient knowledge. Therefore, it is necessary to enhance knowledge and motivation regarding non-remunerated, voluntary blood donation by raising awareness among the younger individuals.⁷

A study was done by Babita Raghuwanshi et al. which was cross-sectional, among students from five colleges in Bhubaneswar, India. The study participants

included 399 students from various courses. The results of the study revealed that, 228 students (57.1%) had good knowledge. VBD was more in the non-medical students. The study concluded that 50% had good knowledge of blood donation, with a similar proportion having donated blood. In addition, students across all streams showed a positive attitude towards blood donation. The study signified the need to raise awareness, address students' fears, and encourage them to donate blood.⁸

A study was done by Dr. Neelkanth Kote et. al, which was cross-sectional, in 2012-13, in Bangalore, Karnataka. A well-structured, validated, and pre-tested questionnaire was used for collecting the data. The findings of the study showed that the students had an average level of knowledge about VBD. The students had a positive attitude about VBD. 10% donated blood. The study concluded that, in comparison to the medical and dental students, the engineering students had lower levels of KAP regarding VBD.⁹

A study was done by Md. Imam Hossain et. al, which was cross-sectional, among 403 students from March to April 2018. A self-administered, well-structured, and validated questionnaire was used for collecting the data. The findings of the study, revealed that 59.05% of students had good knowledge, the female students scored significantly higher than the male students ($p < 0.05$). Only 34.2% had donated blood. The male students donated blood significantly more than the female students ($p < 0.001$). The study concluded that, the students had a favourable attitude towards blood donation, however, their blood donation practices remained low, especially among the female students. Interactive awareness and motivation programs should be developed and implemented in order to enhance VBD.¹¹

A study was done by Habtom Woldeab Gebresilase et. al, which was cross-sectional, among 360 regular undergraduate students, from April 11 to May 2, 2016.

The students were given a structured questionnaire, for collecting the data. Among the Health Science students, gender was a significant predictor of knowledge level, ethnicity and gender were significant predictors of attitudes. For the other group, religion and place of origin were significant predictors of knowledge level. The study concluded a notable difference in knowledge and attitude between students from the two universities. However, there was no difference in their blood donation practices.¹²

A descriptive study was done by Sonam Kumari et. al, across six colleges from November 1, 2008, to October 31, 2009. The study participants were 1,520 students. A self-administered structured donor questionnaire was used for gathering the data. The results of the study showed that, the students answered fear of illness, a barrier for non donation. 90.13% of the students expressed willingness for donation. The study concluded that to enhance voluntary blood donation, targeted campaigns should be conducted, which include interactive awareness sessions aimed at engaging and motivating youngsters to become regular blood donors. In addition, hinderances, especially among women, should be investigated and addressed. Efforts must be put in such a way that the students knowledge and positive attitudes toward VBD can be utilized, finally striving to achieve the goal of 100% voluntary, non-remunerated blood donation (VNRBD).¹³

A study was done by Shailesh Kumar Mishra et. al, which was cross-sectional, among 1,000 college students. A prevalidated, self-administered, structured questionnaire was used for collecting data. The findings of the study revealed, that the donors' knowledge levels were influenced by previous blood donation. 45.8% of students stated fear as a main hinderance. Among them, 26.8% of the students stated they were not fit to donate, while 19% of the students stated fear of becoming weak after donating blood. 27.4% of the students stated fear of needle pain as a reason for

not donating blood. The study concluded that to achieve national voluntary blood donation targets, efforts should focus in removing myths and misconceptions within the specific demographic region to motivate the students for an enhanced participation in blood donation.¹⁴

A comparative cross-sectional study was conducted by Swetha Rajeshwari et al. in Raichur. The study period was from November 2016 and January 2017. A total of 400 students, with 200 from each college, participated in the study. A pre-tested, structured questionnaire was used for collecting the data. The results of the study showed that 28 engineering students (14%) had sufficient understanding about various aspects of VBD, compared to 130 medical students (65%) who had sufficient knowledge in this area. Overall, medical students scored higher in knowledge than the engineering students. The study concluded that both knowledge and practices related to blood donation were more prevalent among medical students than the engineering students.¹⁵

A study was done by Indumati M et. al, which was cross-sectional , among undergraduate dental students at Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai in the year 2017. The study had 200 participants who were given a self-administered questionnaire for collecting data. The results revealed maximum recognized the importance of blood donation, while 82.5% knew the minimum weight of a required for blood donation. 81% had the knowledge about the tests performed on donated blood. 85.5% of students had positive feelings toward blood donation, whereas 14.5% had negative feelings toward blood donation. The study concluded that the KAP among dental students were moderate, signifying the need for awareness programs to encourage blood donation.¹⁶

A descriptive study was done by Muneer M. Musa et. al, among 308 students from medical and engineering faculties of the University of Khartoum. Collection of data was by personal interview. The findings of the study showed that, the students had limited knowledge about blood donation requirements but had information about the blood-borne diseases. Not being asked (55.1%), was the reason most commonly answered by the students for not donating blood. The study concluded that the students should be given information about blood donation services and requirements. Additionally, organizing campaigns and educational sessions is necessary to remove fears and motivate the students to become regular donors.¹⁷

A study was done by Khondokar Naymul Islam et. al, which was cross-sectional, in April 2022 among 400 students at Khulna University. Face-to-face interviews using a well-structured questionnaire was used for gathering data. Among the 394 participants, 237 (60.15%) had less knowledgeable, while 157 (39.85%) were more knowledgeable. 315 students (79.95%) had a favourable attitude, whereas 79 students (20.05%) had an unfavourable attitude. 187 students (47.46%) had donated one time, while 207 (52.54%) had never donated. The study concluded a necessity exists to put efforts in order to make the students develop a favourable attitude and to increase their knowledge to achieve the goal of complete VBD in the future.¹⁸

A study was done by Muhammad Osama Anwer et. al, which was cross-sectional, among 345 students from both medical and non-medical fields. The non-medical fields included engineering, business administration, and computer science. The study took place between August 2011 and May 2012. Data was collected using a predesigned questionnaire. The findings revealed that the primary reason was self-satisfaction (40.2%) as stated by medical group, whereas in the non-medical group, 32.9% donated only to a known person. The medical students stated health concerns

(19%) as the main cause of non-donation, whereas the non-medical students stated not being approached for donation and a lack of awareness (34.8%) as the main cause of non-donation. The study concluded that the overall percentage of blood donors was less in both the groups, especially among the female students. The study highlighted the crucial role of university administrations, blood banks, and related organizations in furthering VBD. The study recommended collaborative efforts, including workshops, seminars, and donation camps, in order to address students' concerns, dispel their misconceptions, and encourage them.¹⁹

A cross-sectional study was conducted among 402 undergraduates in South Central Ethiopia. A questionnaire was used for collecting data. The results of the study showed that 77.6% were knowledgeable, 79.6% positive attitudes and only 19.3% donated previously. Key elements affecting the results were students' level of knowledge, previous place of residence, and academic background. The study recommended that the university should work with key stakeholders to overcome hinderances to VBD in the students.²⁰

A study was done by Elionora Elias et. al, which was cross sectional in the Kilimanjaro region, from April to June 2016 among 422 students. A self-administered questionnaire was used for collecting data. The findings of the study revealed, 30% had previously donated blood, and of those, 55% were repeat donors. A majority (93%) had a favourable attitude toward blood donation. Being male, knowing someone who had donated, having knowledge about volume contributed, readiness to donate in the future, and not anticipating reward post-donation were the key factors significantly associated with previous blood donation. The study concluded that the high levels of awareness, positive attitudes, and willingness for future donation

among the students signifies that the students need to be educated and they should be provided with correct information on the requirements for donating blood.²¹

A comparative cross-sectional study was conducted in multiple countries, where the data was collected using self-administered questionnaires. The study participants included 12,606 university students. The results of the study revealed that 28.5% were knowledgeable. 22.7% donated one time. The study concluded that the students possessed favourable attitude but the blood donation rates remained low from students across all academic fields. Providing education and improving accessibility are essential, for motivating towards voluntary blood donation.²²

A study was done by Sushant Kumar Meinia et. al, which was cross-sectional, in Himachal Pradesh, North India. The study participants included 150 medical students at M.M. Medical College and Hospital, Solan. Questionnaires were used for collecting data. The findings of the study showed that, 124 students (82.67%) answered voluntary donors as the most reliable source of blood. Among the participants, 85 students had never donated blood, whereas 65 students (43.4%) had donated in the past. The study concluded that the students should be given regular awareness sessions about VBD for removing misconceptions among them.²³

MATERIALS AND METHODS

Source of Data: The students enrolled in B.E degree from first year to final year

Study design: A Cross-Sectional Study

Study Period: One year from 1st April 2023 to 31st March 2024 (Twelve months)

Sample size calculation:

Sample size- Calculated by using the formula

$$n = (Z_{\alpha/2} \times S.D / E)^2$$

Where n- sample size,

For $\alpha = 0.05 = 5\%$, $Z_{\alpha/2} = 1.96 = 2$, $S.D = 25.15$

Considering a relative error = 7.15% of 25.15

$$= 1.8$$

$$n = (2 \times 25.15 / 1.8)^2$$

$$= (50.3 / 1.8)^2$$

$$= (27.94)^2$$

$$= 780.64, \text{ rounding off to } \mathbf{800}$$

Sampling method: As per the list obtained from Visvesvaraya Technological University for engineering colleges in Belagavi, there are a total of 7 engineering colleges conducting courses in B.E, out of which 4 colleges were selected randomly.

Name of the college	No. of students in 1 st year	No. of students in 2 nd year	No. of students in 3 rd year	No. of students in 4 th year	Total no. of students
Maratha Mandal Engineering College	177	76	91	65	409
S G Balekundri Institute of Technology	534	405	301	397	1637
Jain College of Engineering	392	420	409	620	1839
KLE Dr. M S Sheshgiri College of Engineering and Technology	650	731	615	620	2616

Name of the college	Total no. of students	Calculation for proportionate sampling	No. of students selected for study
Maratha Mandal Engineering College	409	$409/6501 \times 800$	51
S G Balekundri Institute of Technology	1637	$1637/6501 \times 800$	201
Jain College of Engineering	1839	$1839/6501 \times 800$	226
KLE Dr. M S Sheshgiri College of Engineering and Technology	2616	$2616/6501 \times 800$	322
TOTAL	6501		TOTAL=800

Proportionate sampling for each year of students:

1.Maratha Mandal Engineering College-	1 st year- $51/409 \times 177= 22$
	2 nd year- $51/409 \times 76= 10$
	3 rd year- $51/409 \times 91= 11$
	4 th year- $51/409 \times 65= 8$
2.S G Balekundri Institute of Technology-	1 st year- $201/1637 \times 534= 66$
	2 nd year- $201/1637 \times 405= 49$
	3 rd year- $201/1637 \times 301= 38$
	4 th year- $201/1637 \times 397= 48$
3.Jain College of Engineering-	1 st year- $226/1839 \times 392= 48$
	2 nd year- $226/1839 \times 420= 52$
	3 rd year- $226/1839 \times 409= 50$
	4 th year- $226/1839 \times 620= 76$
4.KLE Dr. M S Sheshgiri College of Engineering and Technology-	1 st year- $322/2616 \times 650= 80$
	2 nd year- $322/2616 \times 731= 90$
	3 rd year- $322/2616 \times 615= 76$
	4 th year- $322/2616 \times 620= 76$

Using the Attendance Registers sampling frame was prepared. Desired number of students were selected using simple random sampling method using computer generated random number

Inclusion Criteria: The students enrolled in B.E degree from first year to final year in the selected four colleges

Exclusion Criteria: Students absent during data collection and the students who do not give consent to take part in the study

Ethical Approval: The clearance has been obtained from Institutional Ethical Committee, J. N. Medical College, KAHER, Belagavi. The ethical clearance letter has been attached to the present study

From the study participants written informed consent was obtained

Questionnaire Validation: For the overall reliability, the questionnaire was internally validated using Cronbach's alpha. For the overall reliability, the Cronbach's alpha value was 0.82. The alpha value for the knowledge was 0.91 and for attitude was 0.74 . Thus, the questionnaire was feasible to carry out the study among the target population.

Data collection procedure: Data was collected after obtaining informed written consent from the students of the selected colleges. Data was collected by personal interview from all the study participants using a Pre-designed and Pre-tested questionnaire. The questionnaire included the socio-demographic variables and knowledge, attitude and practices of study participants regarding voluntary blood donation

Statistical analysis: Obtained data was coded and entered in Microsoft Excel Worksheet. The data was analyzed using statistical software SPSS version 26. The quantitative data was analysed using mean, median and standard deviation. The qualitative data was summarized as percentage and proportion. Multiple linear regression was carried out to assess the influence of independent factors on the knowledge, attitude and practices.

Score: Knowledge: For every correct answer one mark was given and every wrong answer zero mark was given.

However, question 19, 22, 29 had more than one correct answer for all the sub answers one mark was given, hence the aggregate score is 32

Knowledge score was divided according to the marks scored by each participant

Good knowledge: Above Mean+SD

$$= \text{Above } 18.02 + 7.50$$

$$= \text{Above } 26$$

$$= 27 \text{ to } 32 \text{ since } 32 \text{ is the highest score}$$

Moderate knowledge: Mean-SD to Mean+SD

$$= 18.02 - 7.50 \text{ to } 18.02 + 7.50$$

$$= 10 \text{ to } 26$$

Poor knowledge: Below Mean-SD

$$= \text{Below } 18.02 - 7.50$$

$$= \text{Below } 10$$

$$= 0 \text{ to } 9$$

Attitude: For every positive answer, one mark was given, for every negative and neutral answer zero mark was given.

Attitude score was divided according to the marks scored by each participant

Positive attitude: Equal to or above mean

$$= \geq 9.06$$

Negative attitude: Below mean

$$= < 9.06$$

Practice: For every correct answer, one mark was given, for every wrong and neutral answer zero mark was given.

Practice score was divided according to the marks scored by each participant

Favourable practice: Equal to or above mean

$$= \geq 3.06$$

Unfavourable practice: Below mean

$$= < 3.06$$

Study Variables:

Age: Age was recorded to the nearest completed years

Sex: Sex was recorded as male or female

Address: Address was recorded as urban or rural

Branch of study: The branches of study of study participants were grouped under “Computer Science”, “Electronics and communication”, “Electrical”, “Civil”, “Mechanical”, “AI Robotic”, “Chemical”

Year of study: The year of study of study participants was grouped under “1st year”, “2nd year”, “3rd year”, “4th year”

Religion: The religion of study participants was grouped under “Hindu”, “Muslim”, “Christian”, “Jain”, “Others”

Type of family:

Nuclear family: A married couple and their children living together while the children are still regarded as dependents

Joint family: Two or more married couples and their children residing in the same household.

Three-generation family: Representatives of three generations related to each other by direct descent living together

Broken family: A broken family is one where the parents have separated, or where death has occurred of one or both the parents

Others: This group included other types of families not falling under the above family types

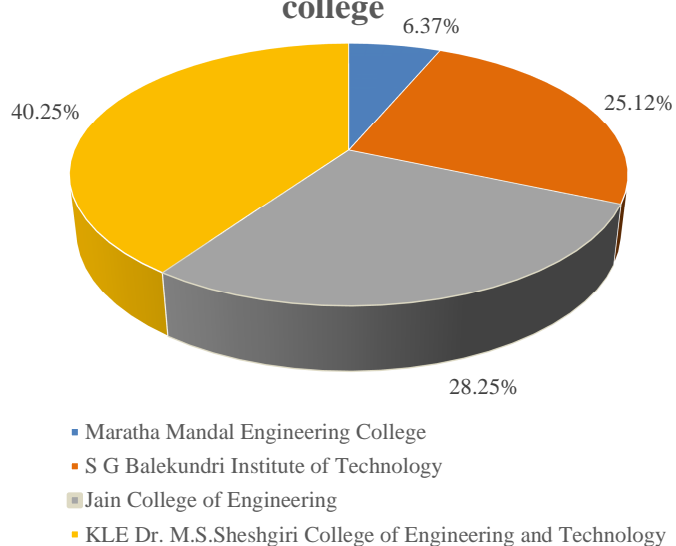
Socio-economic class	Original B. G. Prasad's classification 1961	Modified B. G. Prasad's classification for 1st April 2023 to 31st March 2024
I	100 and above	9066 and above
II	50-99	4533-9065
III	30-49	2720-4532
IV	15-29	1360-2719
V	<15	Below 1360

RESULTS

Table 1: Distribution of participants according to college

College name	Distribution (%)	
	Number	Percentage
Maratha Mandal Engineering College	51	6.37
S G Balekundri Institute of Technology	201	25.12
Jain College of Engineering	226	28.25
KLE Dr. M S Sheshgiri College of Engineering and Technology	322	40.25
Total	800	100.00

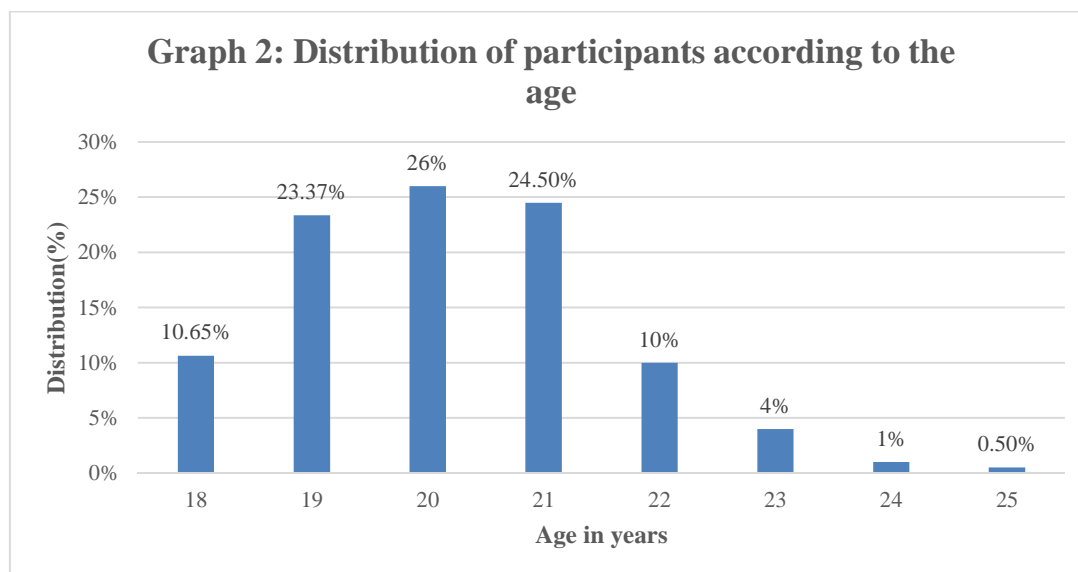
Graph 1: Distribution of participants according to the college



In the present study, majority of the participants, 40.25% were from KLE Dr. M S Sheshgiri College of Engineering and Technology, 28.25% of the participants were from Jain College of Engineering, 25.12% of the participants were from S G Balekundri Institute of Technology and 6.37% of the participants were from Maratha Mandal Engineering College

Table 2: Distribution of participants according to age

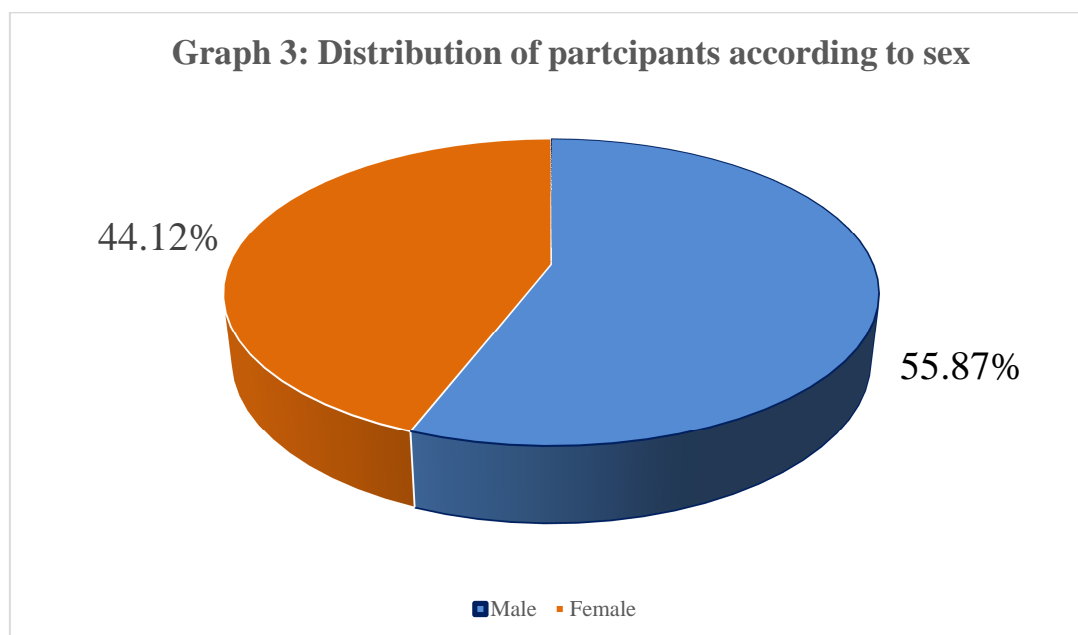
Age (Years)	Distribution(n=800)	
	Number	Percentage
18	85	10.65
19	187	23.37
20	208	26
21	196	24.5
22	80	10
23	32	4
24	8	1
25	4	0.5
Total	800	100.00



In this study, majority of the participants, 26% were aged 20 years, 24.50% were aged 21 years, 23.37% were aged 19 years, 10.65% were aged 18 years, 10% were aged 22 years, 4% were aged 23 years, 1% were aged 24 years, 0.50% were aged 25 years.

Table 3: Distribution of participants according to sex

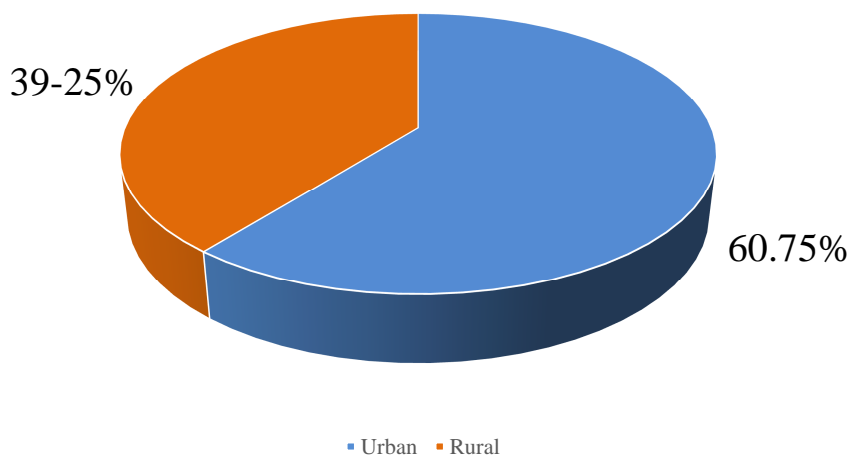
Sex	Distribution (n=800)	
	Number	Percentage
Male	447	55.87
Female	353	44.12
Total	800	100.00

Graph 3: Distribution of participants according to sex

In this study, a greater portion of the participants, 55.87% were males and 44.12% were females.

Table 4: Distribution of participants according to residence

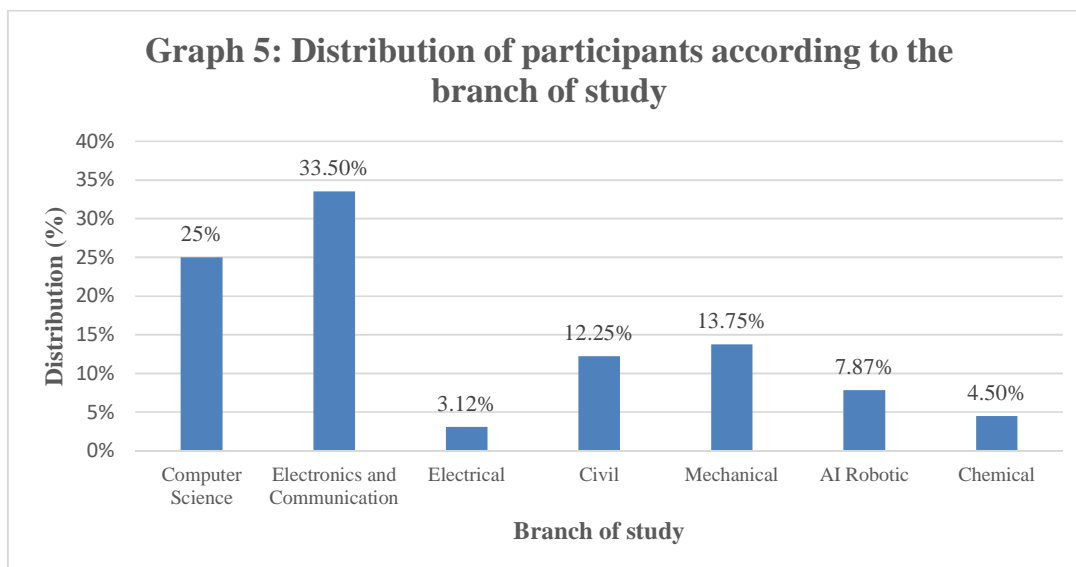
Place of residence	Distribution (n=800)	
	Number	Percentage
Urban	486	60.75
Rural	314	39.25
Total	800	100.00

Graph 4: Distribution of participants according to residence

In this study, a larger portion of the participants, 60.75% were from urban residence and 39.25% were from rural residence.

Table 5: Distribution of participants according to branch of study

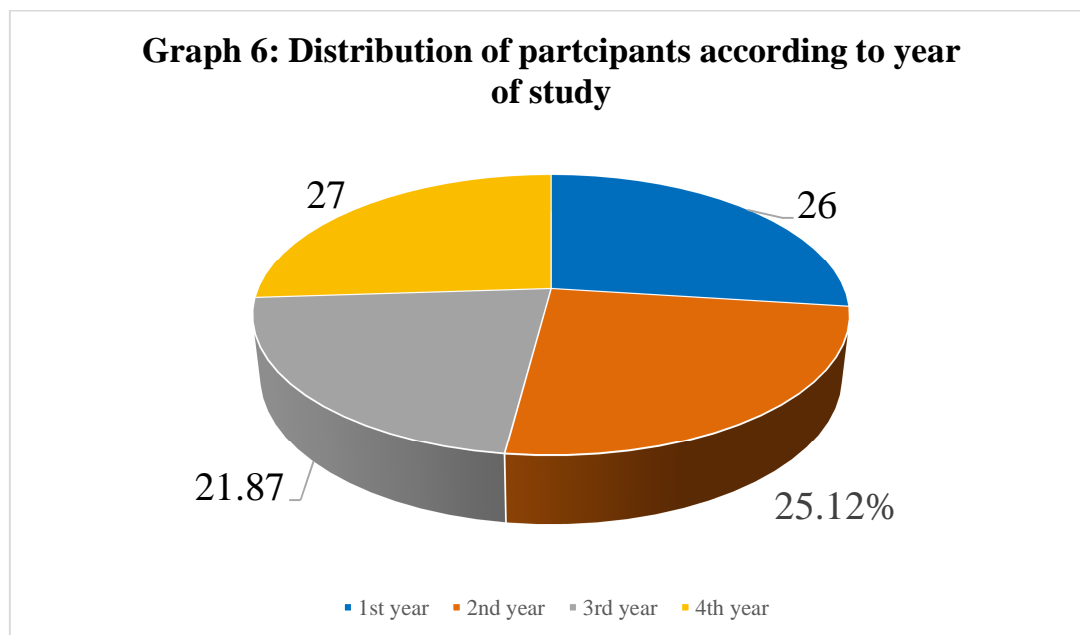
Branch of study	Distribution (n=800)	
	Number	Percentage
Computer Science	200	25
Electronics and Communication	268	33.5
Electrical	25	3.12
Civil	98	12.25
Mechanical	110	13.75
AI Robotic	63	7.87
Chemical	36	4.5
Total	800	100.00



In this study, more participants, 33.50% were from Electronics and Communication branch, 25% were from Computer Science branch, 13.75% were from Mechanical branch, 12.25% were from Civil branch, 7.87% were from AI Robotic branch, 4.50% were from Chemical branch and 3.12% were from Electrical branch.

Table 6: Distribution of participants according to year of study

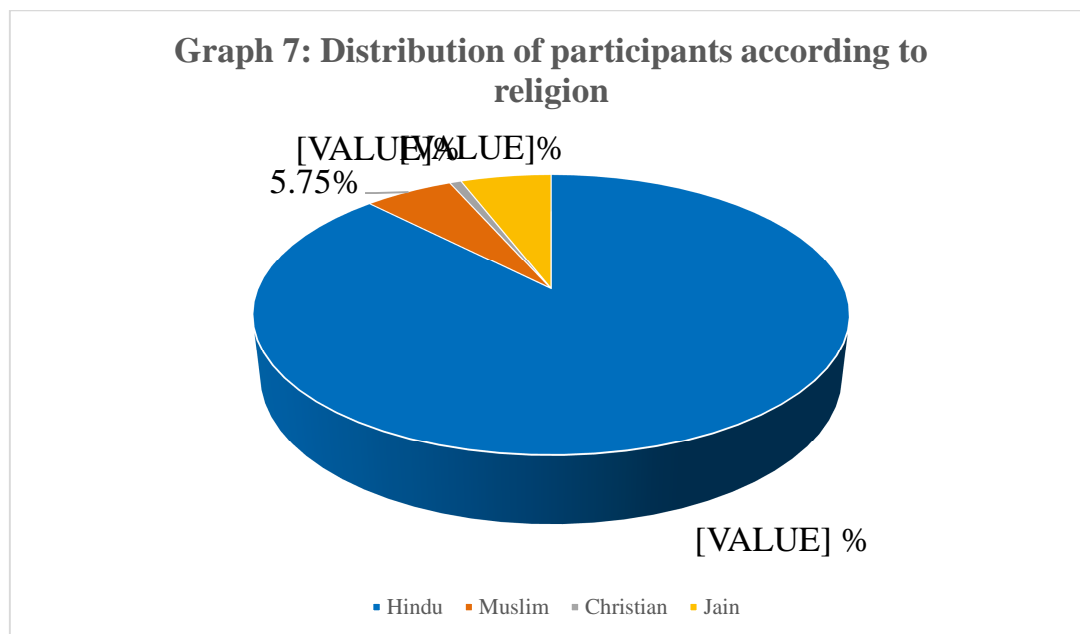
Year of study	Distribution (n=800)	
	Number	Percentage
1 st year	216	27
2 nd year	201	25.12
3 rd year	175	21.87
4 th year	208	26
Total	800	100.00

Graph 6: Distribution of participants according to year of study

In this study, amid the participants, 27% studied in the 1st year, 26% studied in the 4th year, 25.12% studied in the 2nd year and 21.87% studied in the 3rd year

Table 7: Distribution of participants according to religion

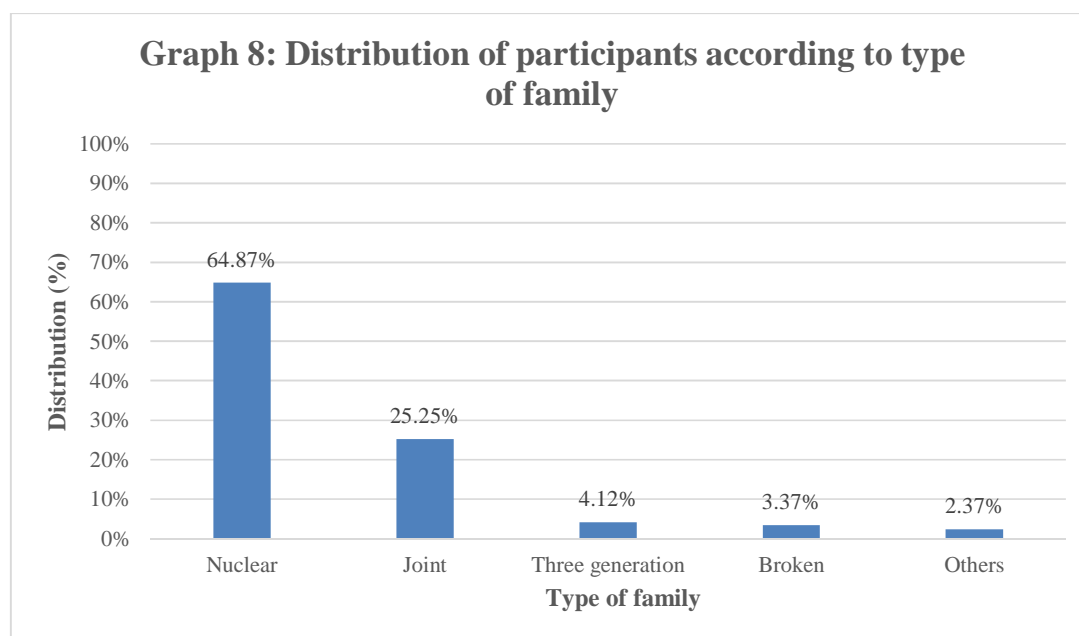
Religion	Distribution (n=800)	
	Number	Percentage
Hindu	701	87.62
Muslim	46	5.75
Christian	6	0.75
Jain	47	5.87
Total	800	100.00



In this study, a greater portion of the participants, 87.62% belonged to Hindu religion, 5.87% belonged to Jain religion, 5.75% belonged to Muslim religion, 0.75% belonged to Christian religion.

Table 8: Distribution of participants according to type of family

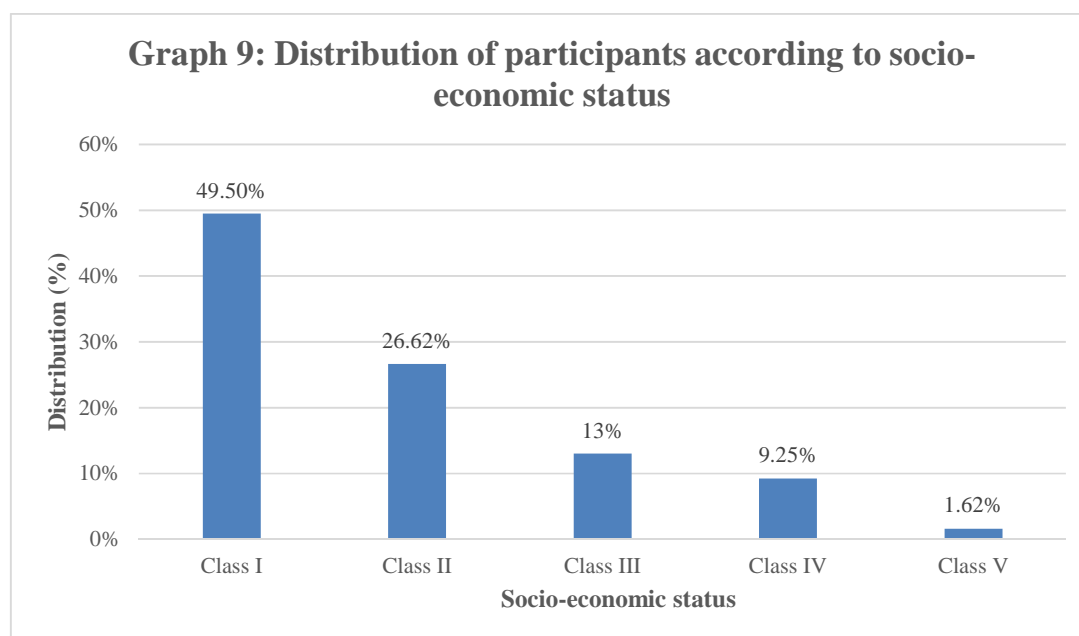
Type of family	Distribution (n=800)	
	Number	Percentage
Nuclear	519	64.87
Joint	202	25.25
Three generation	33	4.12
Broken	27	3.37
Others	19	2.37
Total	800	100.00



In this study, majority of the participants, 64.87% belonged to nuclear family, 25.25% belonged to joint family, 4.12% belonged to three generation family, 3.37% belonged to broken family and 2.37% to other family types.

Table 9: Distribution of participants according to socio-economic status

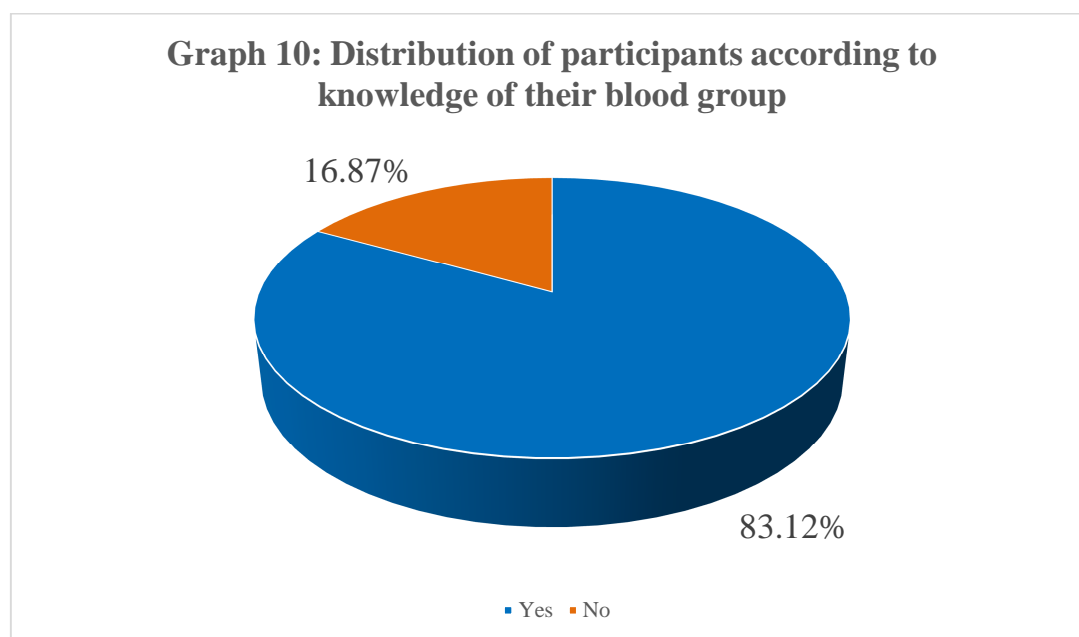
Socio-economic status	Distribution (n=800)	
	Number	Percentage
Class I	396	49.50
Class II	213	26.62
Class III	104	13
Class IV	74	9.25
Class V	13	1.62
Total	800	100.00



In this study, according to Modified B G Prasad classification, a greater portion of the participants, 49.50% belonged to class I, 26.62% of the participants belonged to class II, 13% of the participants belonged to class III, 9.25% of the participants belonged to class IV and 1.62% of the participants belonged to class V.

Table 10: Distribution of participants according to knowledge of their blood group

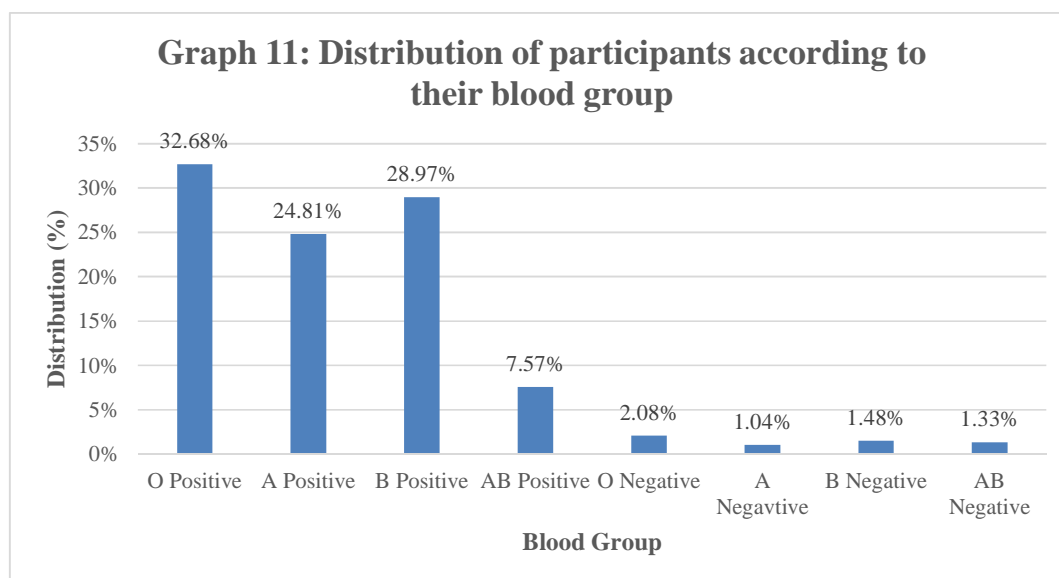
Knowledge of their blood group	Distribution (n=800)	
	Number	Percentage
Yes	673	84.1
No	127	15.9
Total	800	100.00



In this study, a greater percentage of participants, 83.12% knew their blood group, 16.87% did not know their blood group.

Table 11: Distribution of participants according to their blood group

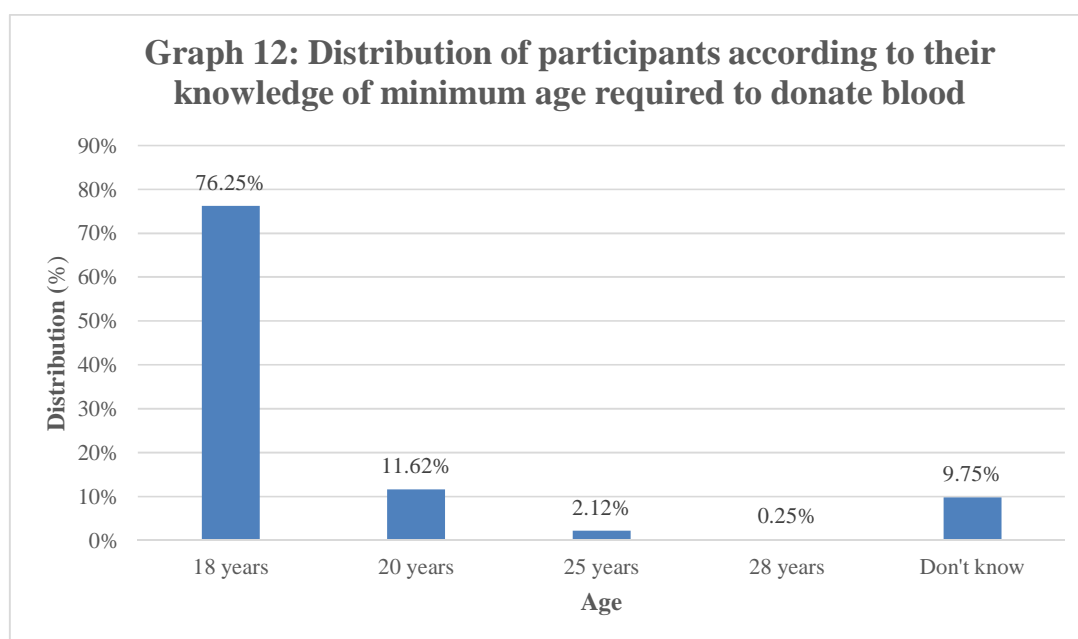
Blood group	Distribution (n=800)	
	Number	Percentage
O positive	220	32.68%
A positive	167	24.81%
B positive	195	28.97%
AB positive	51	7.57%
O negative	14	2.08%
A negative	7	1.04%
B negative	10	1.48%
AB negative	9	1.33%
Total	673	100.00



In this study, among those participants who knew their blood group, a greater part, 32.68% had O Positive blood group, 24.81% belonged to A Positive blood group, 28.97% belonged to B Positive blood group, 7.57% belonged to AB Positive blood group, 2.08% belonged to O Negative blood group, 1.04% belonged to A Negative blood group, 1.48% belonged to B Negative blood group and 1.33% belonged to AB Negative blood group

Table 12: Distribution of participants according to their knowledge of minimum age required to donate blood

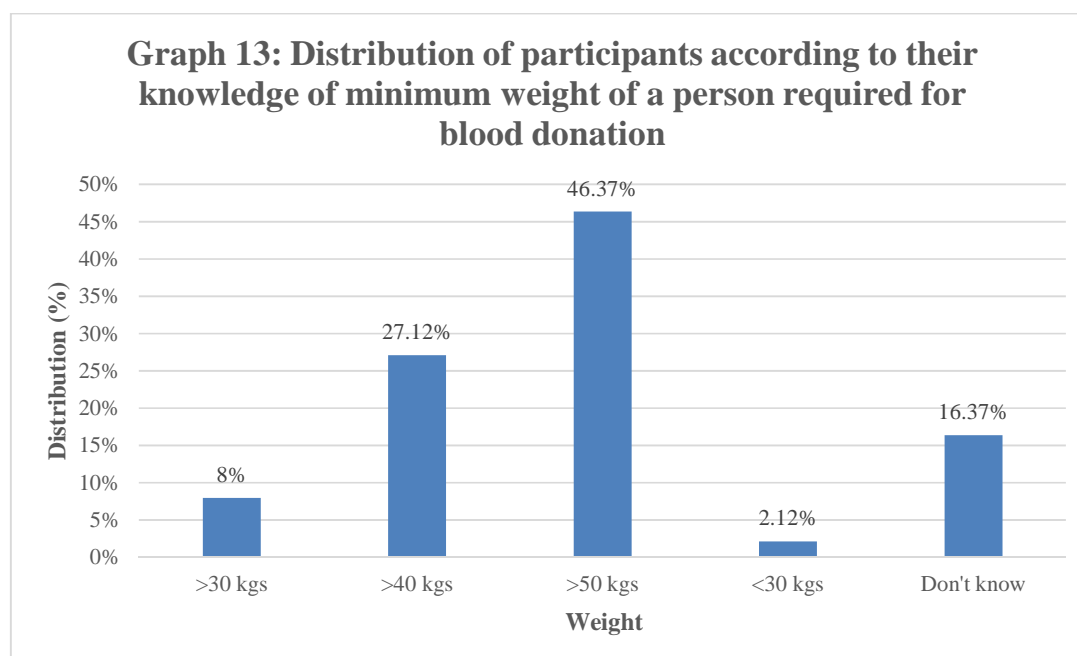
Age	Distribution (n=800)	
	Number	Percentage
18 years	610	76.25
20 years	93	11.62
25 years	17	2.12
28 years	2	0.25
Don't know	78	9.75
Total	800	100.00



In this study, a greater percentage of participants, 76.25% answered correctly as 18 years as the minimum age required to donate blood, 11.62% stated 20 years as the minimum age required to donate blood, 9.75% stated don't know, 2.12% stated 25 years as the minimum age required to donate blood and 0.25% stated 28 years as the minimum age required to donate blood.

Table 13: Distribution of participants according to their knowledge of the minimum weight of a person required for blood donation

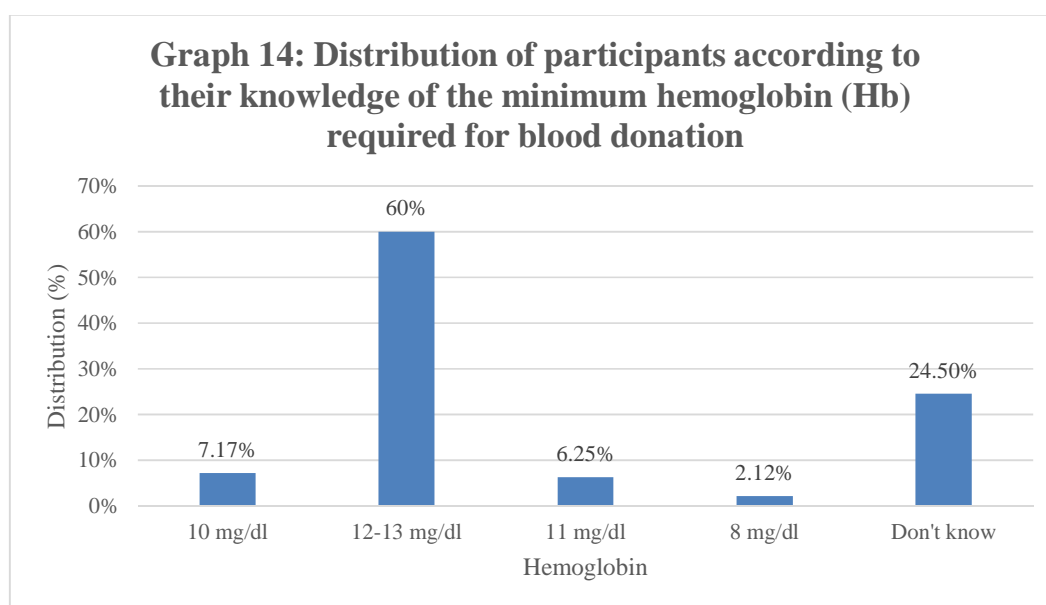
The minimum weight of a person required for blood donation	Distribution (n=800)	
	Number	Percentage
>30 kgs	64	8
>40 kgs	217	27.12
>50 kgs	371	46.37
< 30 kgs	17	2.12
Don't know	131	16.37
Total	800	100.00



In this study, majority, 46.37% answered correctly as >50 kgs as the minimum weight of a person required for blood donation, 27.12% stated >40 kgs as the minimum weight of a person required for blood donation, 16.37 stated don't know, 8% stated >30 kgs as the minimum weight of a person required for blood donation and 2.12% stated <30 kgs as the minimum weight of a person required for blood donation.

Table 14: Distribution of participants according to their knowledge of the minimum hemoglobin (Hb) required for blood donation

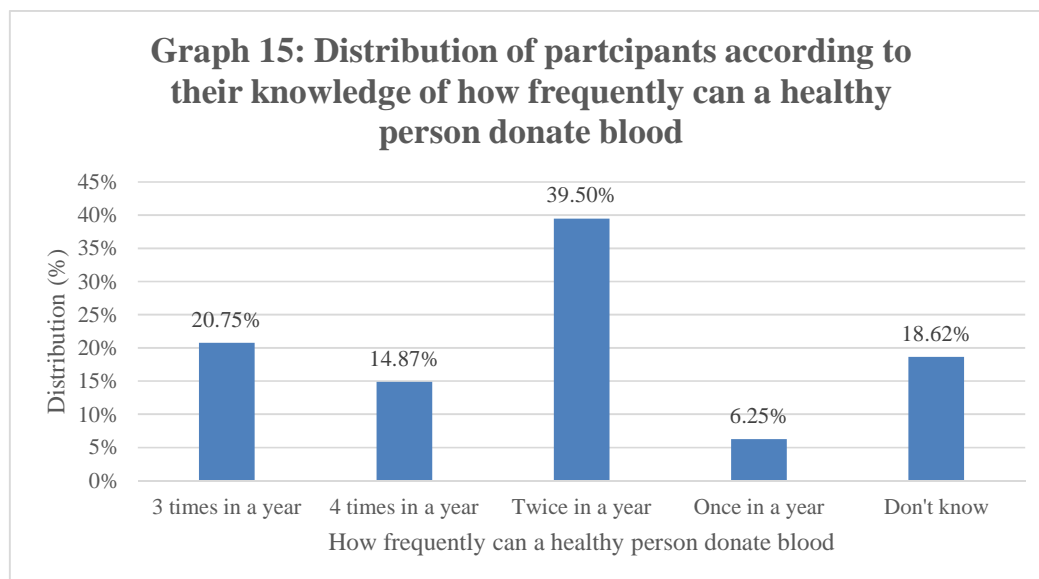
Hemoglobin	Distribution (n=800)	
	Number	Percentage
10 mg/dl	57	7.17
12-13 mg/dl	480	60
11 mg/dl	50	6.25
8 mg/dl	17	2.12
Don't know	196	24.50
Total	800	100.00



In this study, a greater portion of the participants, 60% answered correctly as 12-13mg/dl as the minimum hemoglobin required for blood donation, 24.25% stated don't know, 7.17% stated 10 mg/dl as the minimum hemoglobin required for blood donation, 6.25% stated 11 mg/dl as the minimum hemoglobin required for blood donation and 2.12% stated 8 mg/dl as the minimum hemoglobin required for blood donation.

Table 15: Distribution of participants according to their knowledge of how frequently can a healthy person donate blood

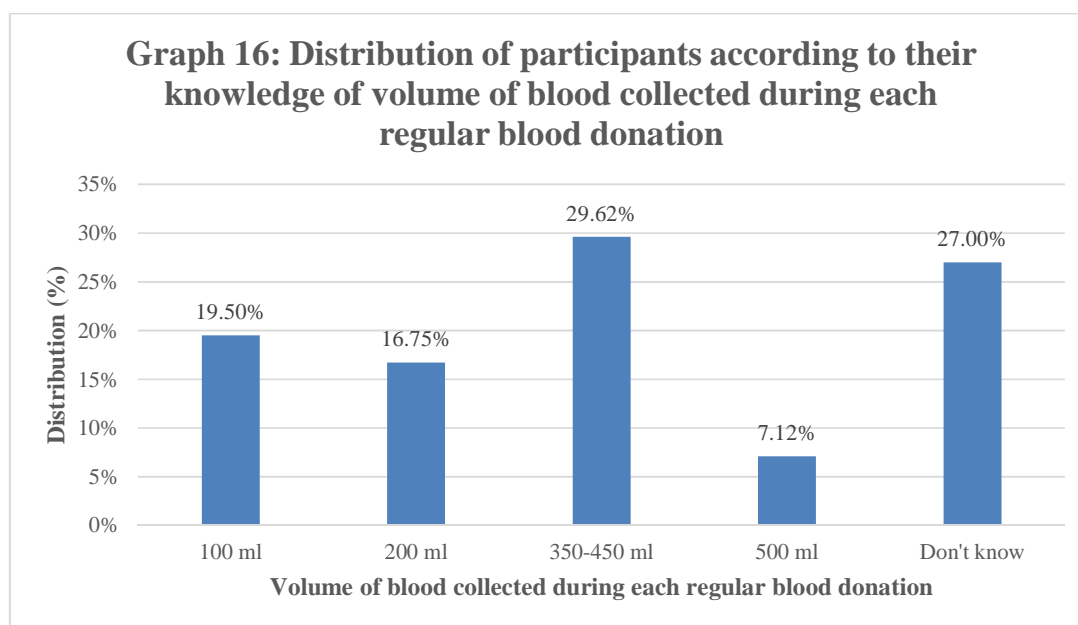
How frequently can a healthy person donate blood	Distribution (n=800)	
	Number	Percentage
3 times in a year	166	20.75
4 times in a year	119	14.87
Twice in a year	316	39.50
Once in a year	50	6.25
Don't know	149	18.62
Total	800	100.00



In this study, 14.87% of the participants answered correctly that a fit individual can donate blood 4 times in a year, 39.50% stated that a fit individual can donate blood twice in a year, 18.62% stated don't know, 20.75% stated that a fit individual can donate blood 3 times in a year, and 6.25% stated that a fit individual can donate blood once in a year.

Table 16: Distribution of participants according to their knowledge of volume of blood collected during each regular blood donation

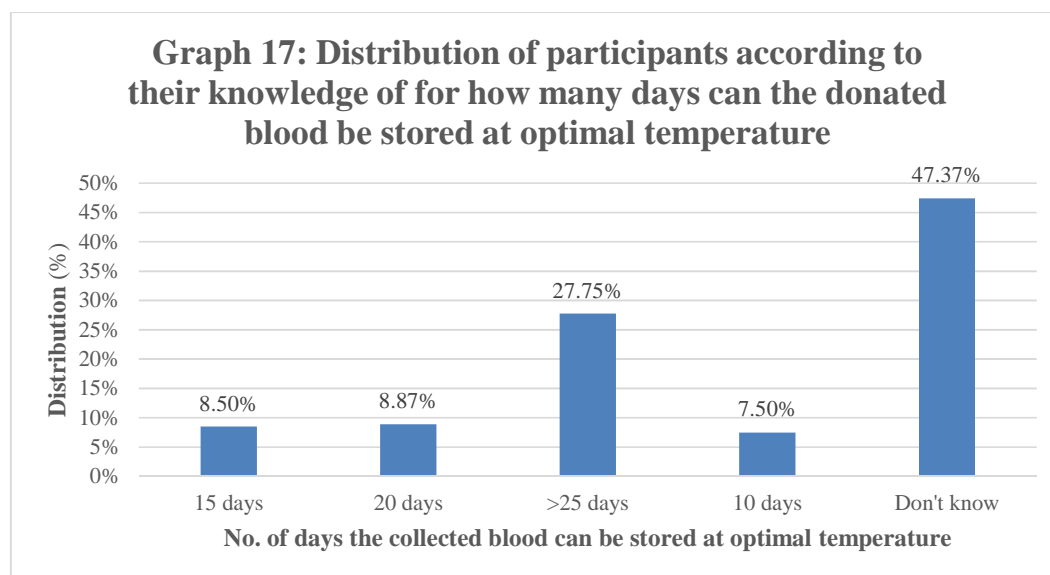
Amount of blood drawn during each regular blood donation	Distribution (n=800)	
	Number	Percentage
100 ml	156	19.50
200 ml	134	16.75
350-450 ml	237	29.62
500 ml	57	7.12
Don't know	216	27
Total	800	100.00



In this study, majority of the participants, 29.62% answered correctly as 350-450 ml as the amount of blood drawn during each regular blood donation, 19.50% answered 100 ml as the amount of blood drawn during each regular blood donation, 27% answered don't know, 16.75% answered 200 ml as the amount of blood drawn during each regular blood donation and 7.12% answered 500 ml as the amount of blood drawn during each regular blood donation.

Table 17: Distribution of participants according to their knowledge of for how many days can the donated blood be stored at optimal temperature

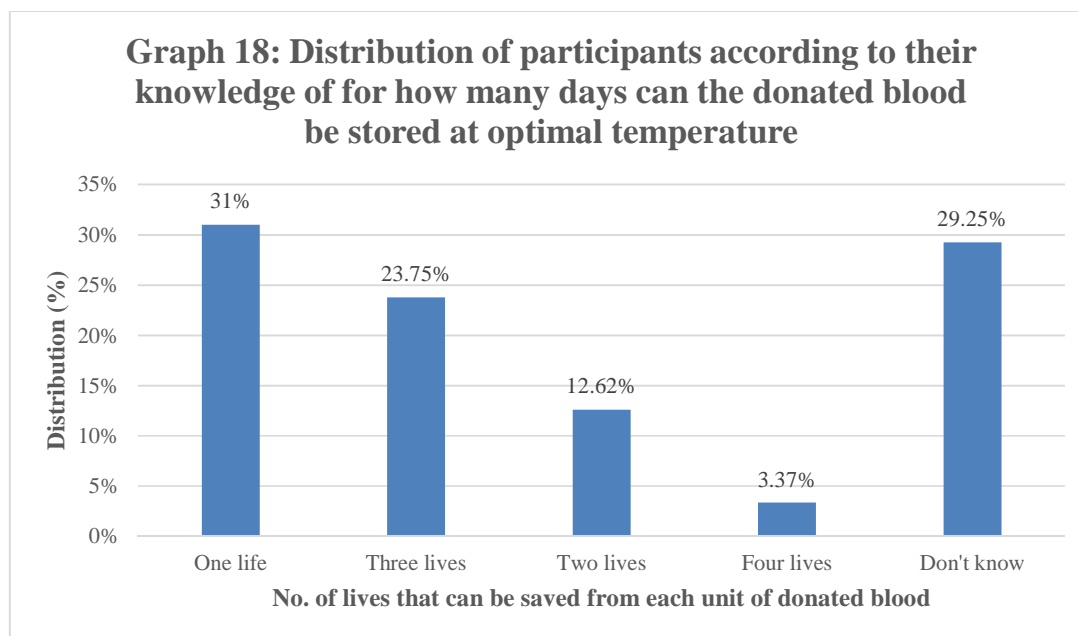
For how many days can the collected blood be stored at optimal temperature	Distribution (n=800)	
	Number	Percentage
15 days	68	8.50
20 days	71	8.87
>25 days	222	27.75
10 days	60	7.5
Don't know	379	47.37
Total	800	100.00



In this study, amid the participants, 27.75% stated correctly that the donated blood can be stored at optimal temperature for >25 days, majority 47.37% stated as don't know, 8.87% stated that the donated blood can be stored at optimal temperature for 20 days, 8.50% stated that the donated blood can be stored at optimal temperature for 15 days and 7.50% stated that the donated blood be stored at optimal temperature for 10 days.

Table 18: Distribution of participants according to their knowledge of how many lives can be saved from each unit of donated blood

How many lives can be saved from each unit of donated blood	Distribution (n=800)	
	Number	Percentage
One life	248	31
Three lives	190	23.75
Two lives	101	12.62
Four lives	27	3.37
Don't know	234	29.25
Total	800	100.00

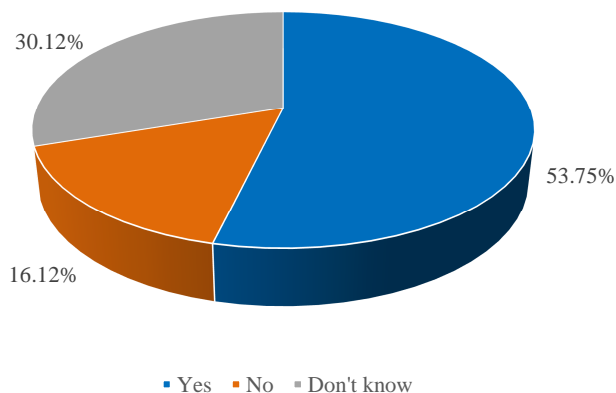


In this study, 23.75% of the participants mentioned correctly that three lives can be saved from each unit of donated blood, 31% mentioned that one life can be saved from each unit of donated blood, 29.25% mentioned don't know, 12.62% mentioned that two lives can be saved from each unit of donated blood and 3.37% mentioned that four lives can be saved from each unit of donated blood.

Table 19: Distribution of participants according to their knowledge of whether the donated blood is screened for transmissible infections like HIV, Hepatitis and Malaria

Whether the collected blood is screened for transmissible infections like HIV, Hepatitis and Malaria	Distribution (n=800)	
	Number	Percentage
Yes	430	53.75
No	129	16.12
Don't know	241	30.12
Total	800	100.00

Graph 19: Distribution of participants according to their knowledge of whether the donated blood is screened for transmissible infections like HIV, Hepatitis and Malaria

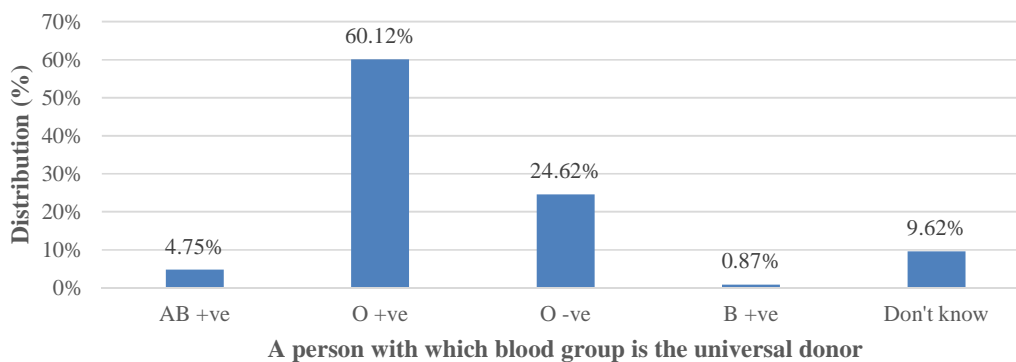


In this study, majority 53.75% answered correctly as the donated blood is screened for transmissible infections like HIV, Hepatitis and Malaria, 30.12% mentioned as don't know and 16.12% mentioned as the donated blood is not screened for transmissible infections like HIV, Hepatitis and Malaria.

Table 20: Distribution of participants according to their knowledge of a person with which blood group is considered as the universal donor

A person with which blood group is the universal donor	Distribution (n=800)	
	Number	Percentage
AB +ve	38	4.75
O +ve	481	60.12
O -ve	197	24.62
B +ve	7	0.87
Don't know	77	9.62
Total	800	100.00

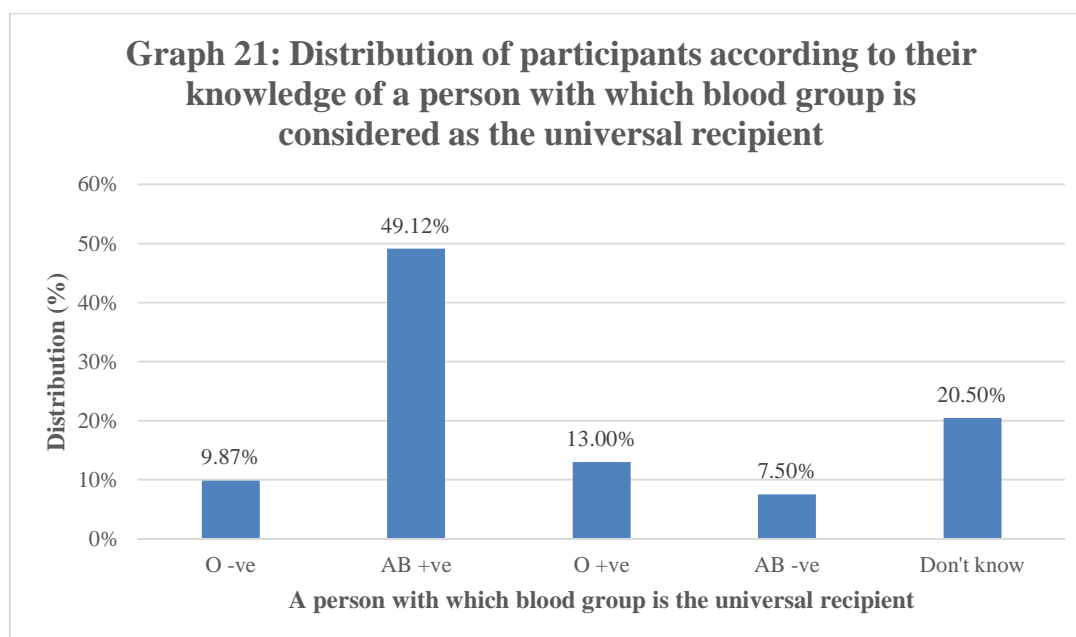
Graph 20: Distribution of participants according to their knowledge of a person with which blood group is considered as the universal donor



In this study, majority of the participants, 60.12% answered correctly that a person with O +ve blood group is considered as the universal donor, 24.62% mentioned that a person with O -ve blood group is considered as the universal donor, 4.75% mentioned that a person with AB +ve blood group is the considered as universal donor, 9.62% mentioned don't know and 0.87% mentioned that a person with B +ve blood group is considered as the universal donor.

Table 21: Distribution of participants according to their knowledge of a person with which blood group is considered as the universal recipient

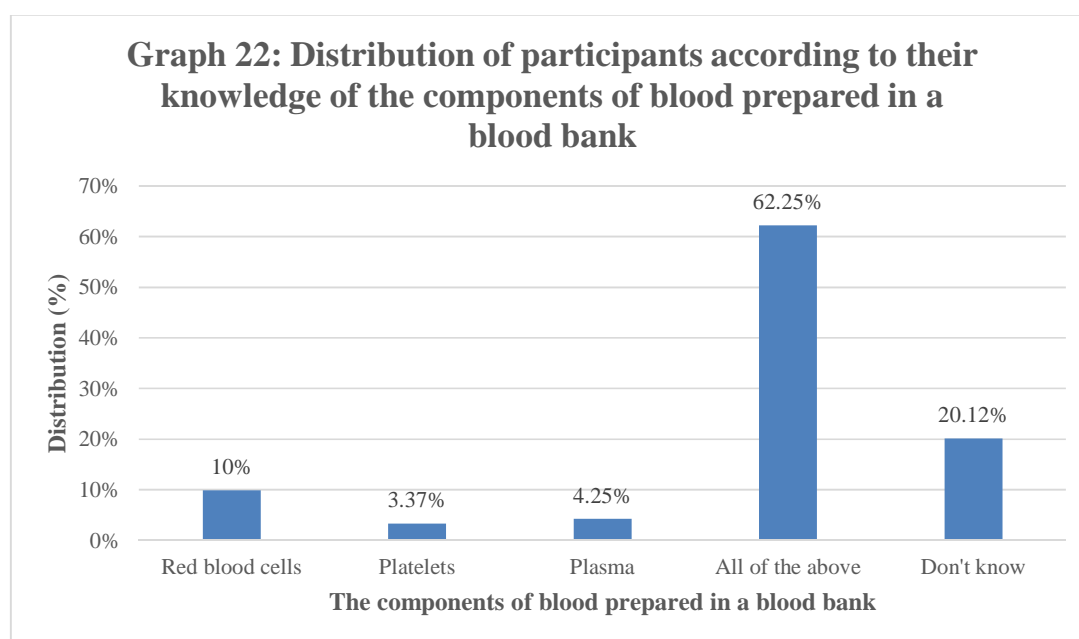
A person with which blood group is the universal recipient	Distribution (n=800)	
	Number	Percentage
O -ve	79	9.87
AB +ve	393	49.12
O +ve	104	13
AB -ve	60	7.5
Don't know	164	20.5
Total	800	100.00



In this study, a greater portion of the participants, 49.12% answered correctly that a person with AB +ve blood group is considered as the universal recipient, 20.50% stated don't know, 13% stated that a person with O+ve blood group is considered as the universal recipient, 9.87% stated O -ve is considered as the universal recipient and 7.50% stated that a person with AB -ve blood group is considered as the universal recipient.

Table 22: Distribution of participants according to their knowledge of the components of blood prepared in a blood bank

The components of blood prepared in a blood bank	Distribution (n=800)	
	Number	Percentage
Red blood cells	80	10
Platelets	27	3.37
Plasma	34	4.25
All of the above	498	62.25
Don't know	161	20.12
Total	800	100.00

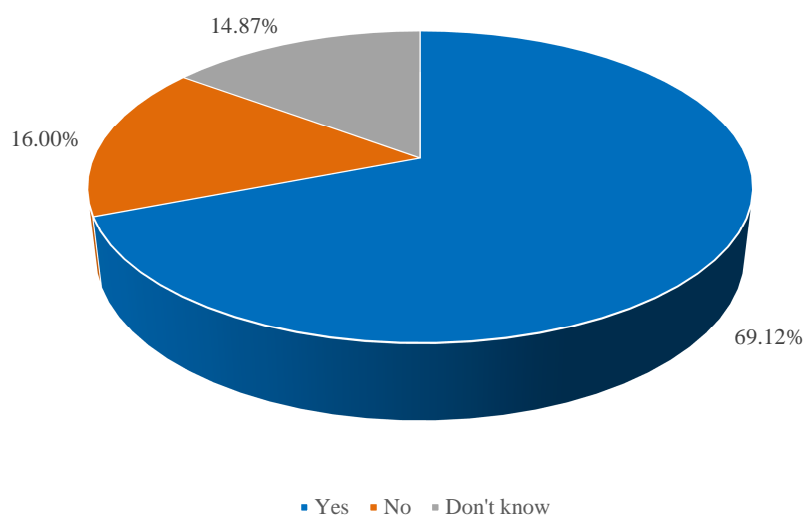


In this study, a greater percentage of participants, 62.25% answered correctly that all of the above (Red blood cells, Platelets, Plasma) as the components of blood prepared in a blood bank, 20.12% mentioned don't know, 10% mentioned red blood cells as the components of blood prepared in a blood bank, 4.25% mentioned plasma as the components of blood prepared in a blood bank and 3.37% mentioned platelets as the components of blood prepared in a blood bank.

Table 23: Distribution of participants according to their knowledge of whether diseases can be transmitted during blood donation

Can diseases be transmitted during blood donation	Distribution (n=800)	
	Number	Percentage
Yes	553	69.12
No	128	16
Don't know	119	14.87
Total	800	100.00

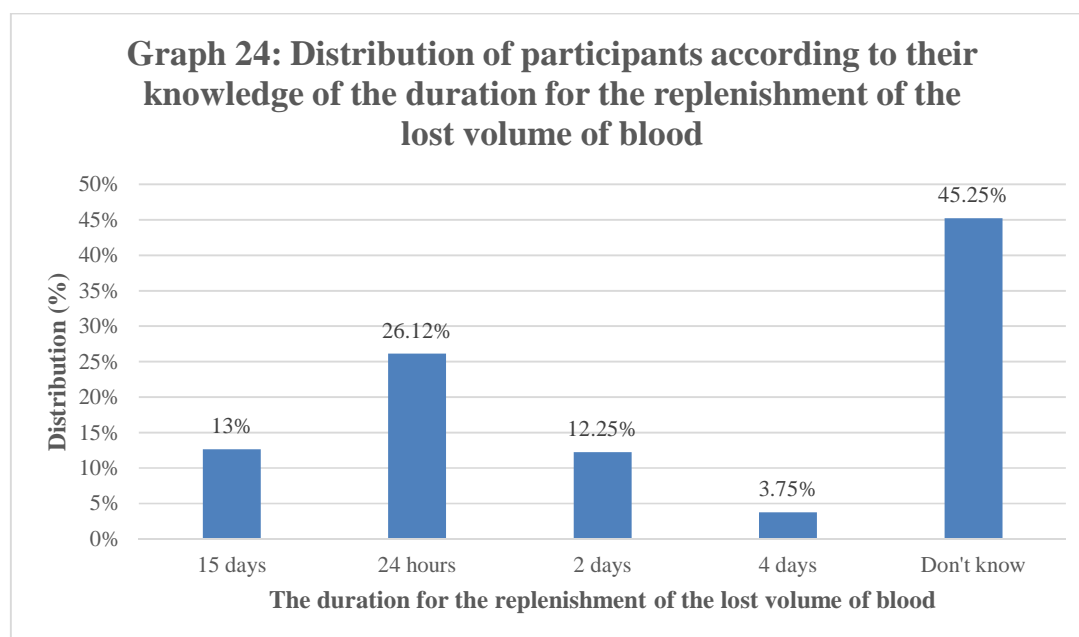
Graph 23: Distribution of participants according to their knowledge of whether diseases can be transmitted during blood donation



In this study, most portion of the participants, 69.12% answered correctly that diseases can be transmitted during blood donation, 16% stated that diseases cannot be transmitted during blood donation and 14.87% stated as don't know.

Table 24: Distribution of participants according to their knowledge of the duration for the replenishment of the lost volume of blood

The duration for the replenishment of the lost volume of blood	Distribution (n=800)	
	Number	Percentage
15 days	101	12.62
24 hours	209	26.12
2 days	98	12.25
4 days	30	3.75
Don't know	362	45.25
Total	800	100.00

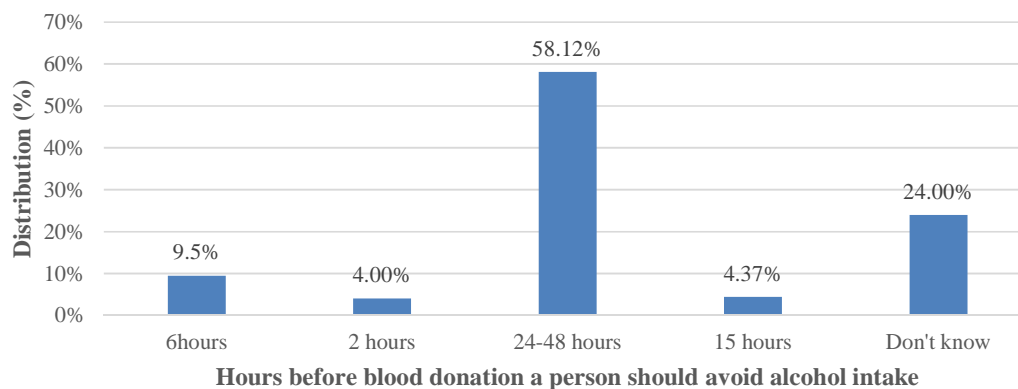


In this study, amid the participants, 26.12% mentioned correctly as 24 hours as the duration for the replenishment of the lost volume of blood, majority, 45.25% mentioned don't know, 13% mentioned 15 days as the duration for the replenishment of the lost volume of blood, 12.25% mentioned 2 days as the duration for the replenishment of the lost volume of blood and 3.75% mentioned 4 days as the duration for the replenishment of the lost volume of blood.

Table 25: Distribution of participants according to their knowledge of for how many hours before blood donation should a person avoid alcohol intake

For how many hours before blood donation should a person avoid alcohol intake	Distribution (n=800)	
	Number	Percentage
6 hours	76	9.5
2 hours	32	4
24 – 48 hours	465	58.12
15 hours	35	4.37
Don't know	192	24
Total	800	100.00

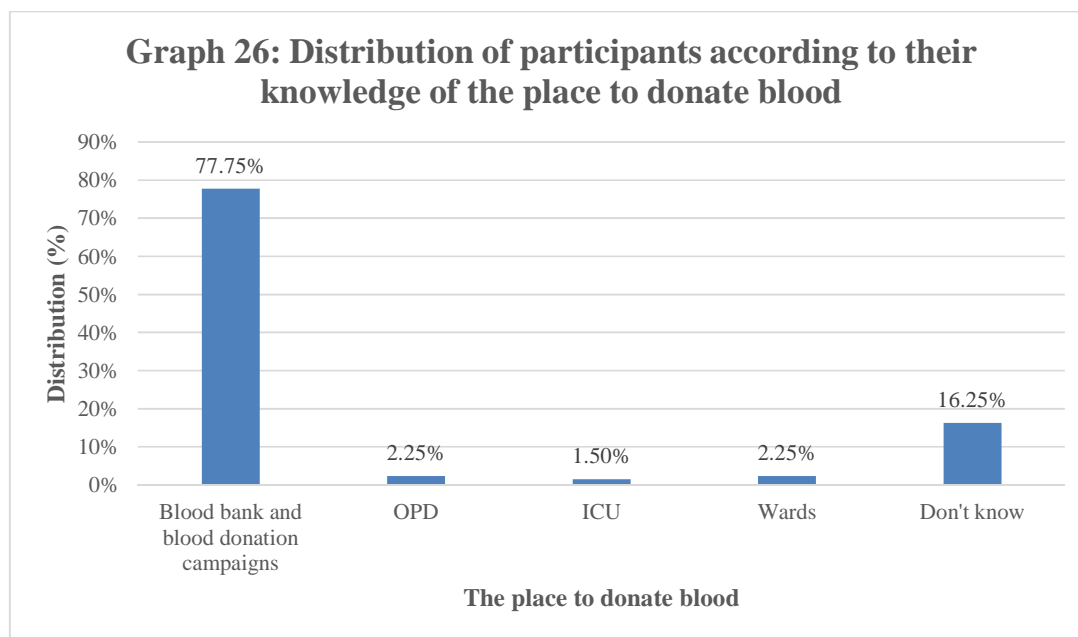
Graph 25: Distribution of participants according to their knowledge of for how many hours before blood donation should a person avoid alcohol intake



In this study, a greater portion of the participants, 58.12% answered correctly as 24-48 hours as the duration before blood donation a person should avoid alcohol intake, 24% stated don't know, 9.5% stated 6 hours as the duration before blood donation a person should avoid alcohol intake, 4.37% stated 15 hours as the duration before blood donation a person should avoid alcohol intake and 4% stated 2 hours as the duration before blood donation a person should avoid alcohol intake.

Table 26: Distribution of participants according to their knowledge of the place to donate blood

The place to donate blood	Distribution (n=800)	
	Number	Percentage
Blood bank and blood donation campaigns	622	77.75
OPD	18	2.25
ICU	12	1.5
Wards	18	2.25
Don't know	130	16.25
Total	800	100.00

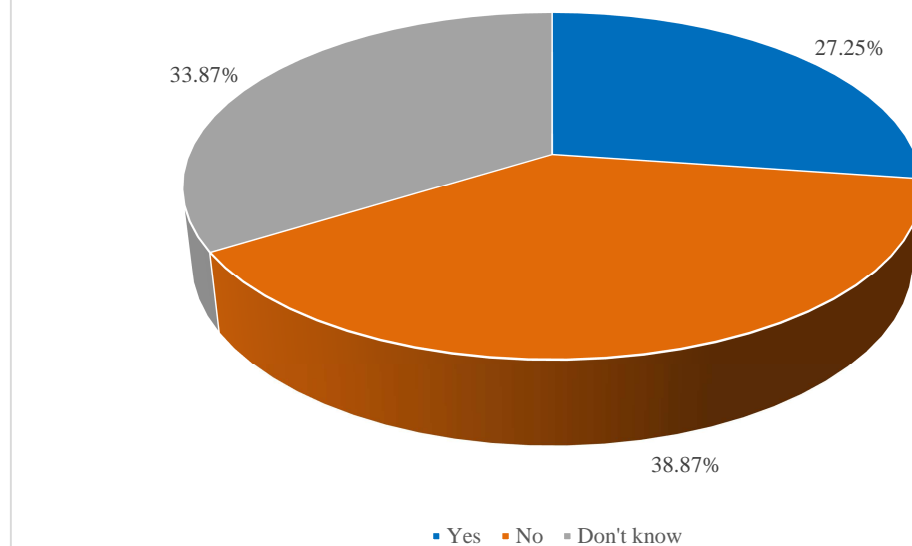


In this study, a vast majority of the participants, 77.75% answered correctly as blood bank and blood donation campaigns as the place to donate blood, 16.25% stated don't know, 2.25% stated OPD as the place to donate blood, 2.25% stated wards as the place to donate blood and 1.50% stated ICU as the place to donate blood.

Table 27: Distribution of participants according to their knowledge of whether a menstruating girl can donate blood

Can a menstruating girl donate blood	Distribution (n=800)	
	Number	Percentage
Yes	218	27.25
No	311	38.87
Don't know	271	33.87
Total	800	100.00

Graph 27: Distribution of participants according to their knowledge of whether a menstruating girl can donate blood

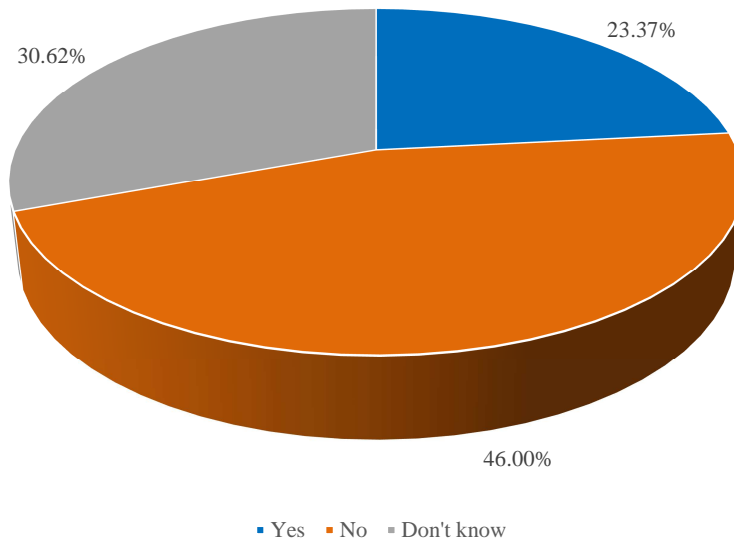


In this study, majority of the participants, 38.87% answered correctly that a menstruating girl cannot donate blood, 33.87% mentioned don't know and 27.25% mentioned that a menstruating girl can donate blood.

Table 28: Distribution of participants according to their knowledge of whether a person can donate blood after vaccination

Can a person donate blood after vaccination	Distribution (n=800)	
	Number	Percentage
Yes	187	23.37
No	368	46
Don't know	245	30.62
Total	800	100.00

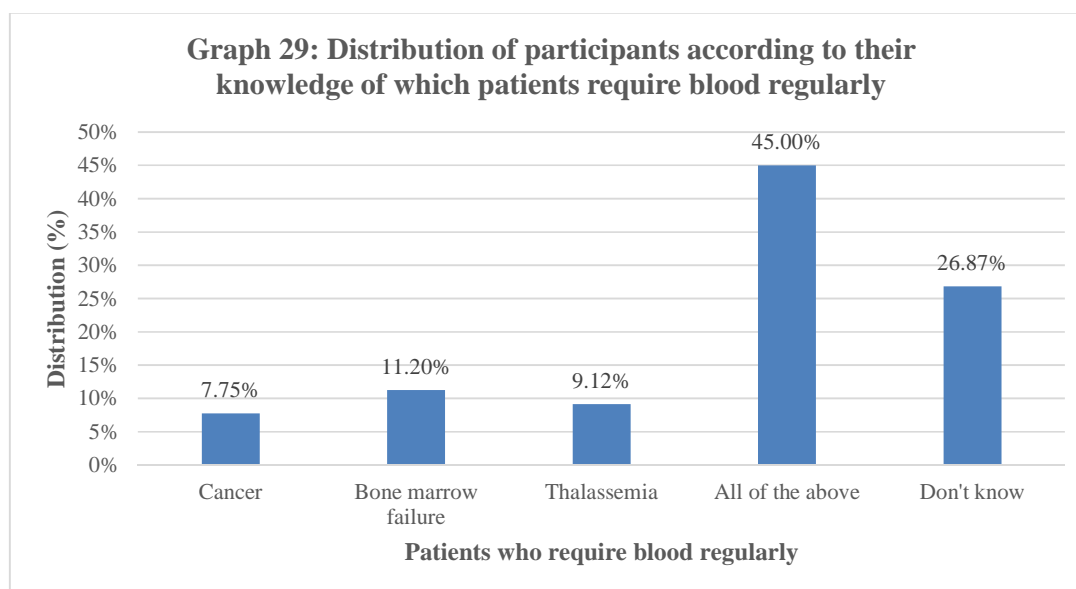
Graph 28: Distribution of participants according to their knowledge of whether a person can donate blood after vaccination



In this study, majority of the participants, 46% answered correctly that a person cannot donate blood after vaccination, 30.62% stated don't know and 23.37% stated that a person can donate blood after vaccination.

Table 29: Distribution of participants according to their knowledge of which patients require blood regularly

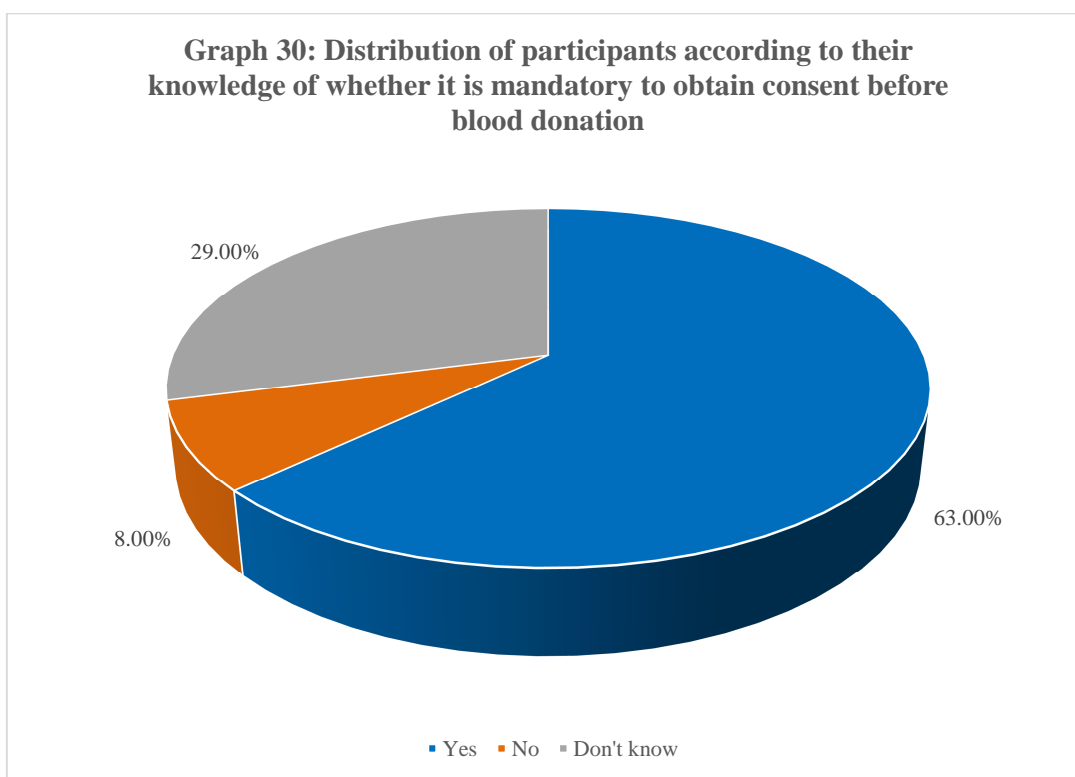
Patients who require blood regularly	Distribution (n=800)	
	Number	Percentage
Cancer	62	7.75
Bone marrow failure	90	11.20
Thalassemia	73	9.12
All of the above	360	45
Don't know	215	26.87
Total	800	100.00



In this study, greater portion of the participants, 45% answered correctly that all of the above patients (Cancer, Bone marrow failure, Thalassemia) require blood regularly, 26.87% stated don't know, 11.25% stated bone marrow failure patients require blood regularly, 9.12% stated thalassemia patients require blood regularly and 7.75% stated cancer patients require blood regularly.

Table 30: Distribution of participants according to their knowledge of whether it is mandatory to obtain consent before blood donation

Is it mandatory to obtain consent before blood donation	Distribution (n=800)	
	Number	Percentage
Yes	504	63
No	64	8
Don't know	232	29
Total	800	100.00

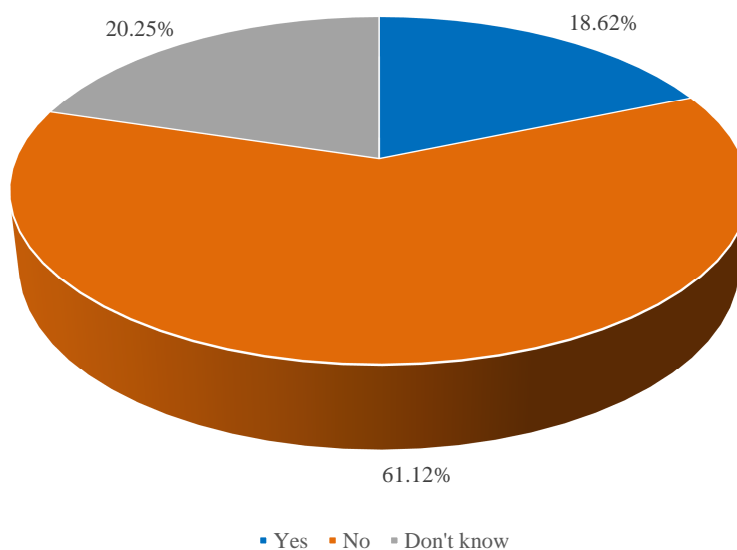


In this study, a greater portion, 63% answered correctly that it is mandatory to obtain consent before blood donation, 29% of the participants answered don't know and 8% of the participants answered that it is not mandatory to obtain consent prior to blood donation.

Table 31: Distribution of participants according to their knowledge of whether a person can donate blood on an empty stomach

Can a person donate blood without eating	Distribution (n=800)	
	Number	Percentage
Yes	149	18.62
No	489	61.12
Don't know	162	20.25
Total	800	100.00

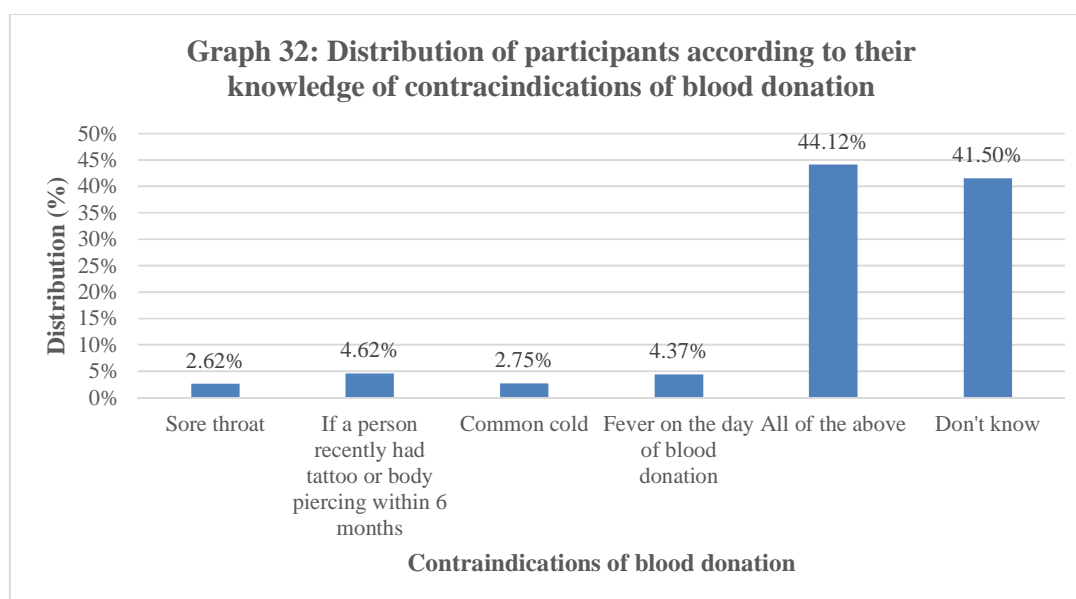
Graph 31: Distribution of participants according to their knowledge of whether a person can donate blood on an empty stomach



In this study, majority of the participants, 61.12% answered correctly that a person cannot donate blood on an empty stomach, 20.25% stated don't know and 18.62% stated that a person can donate blood on an empty stomach.

Table 32: Distribution of participants according to their knowledge of contraindications of blood donation

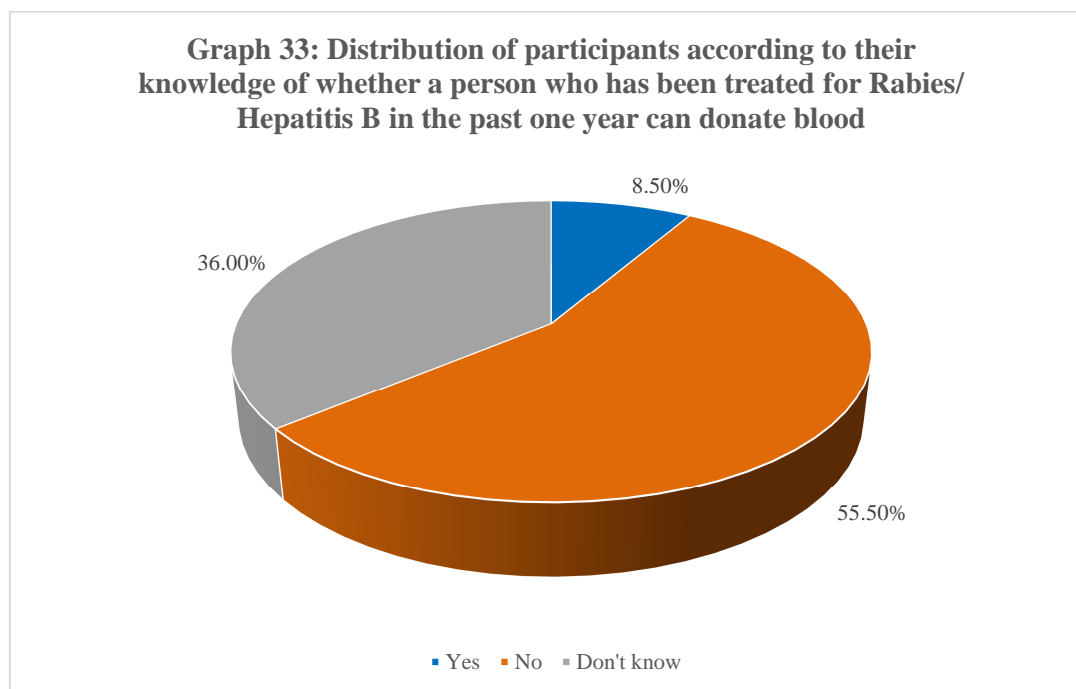
Contraindications of blood donation	Distribution (n=800)	
	Number	Percentage
Sore throat	21	2.62
If a person recently had tattoo or body piercing within 6 months	37	4.62
Common cold	22	2.75
Fever on the day of blood donation	35	4.37
All of the above	353	44.12
Don't know	332	41.50
Total	800	100.00



In this study, a greater part of participants, 44.12% answered correctly as all of the above (Sore throat, If a person recently had tattoo or body piercing within 6 months, Common cold, Fever on the day of blood donation) as the contraindications of blood donation, 41.50% mentioned don't know, 2.62% mentioned sore throat, 4.62% mentioned if a person recently had tattoo or body piercing within 6 months, 4.37% mentioned fever on the day of blood donation and 2.75% mentioned common cold.

Table 33: Distribution of participants according to their knowledge of whether a person who has been treated for Rabies/ Hepatitis B in the past one year can donate blood

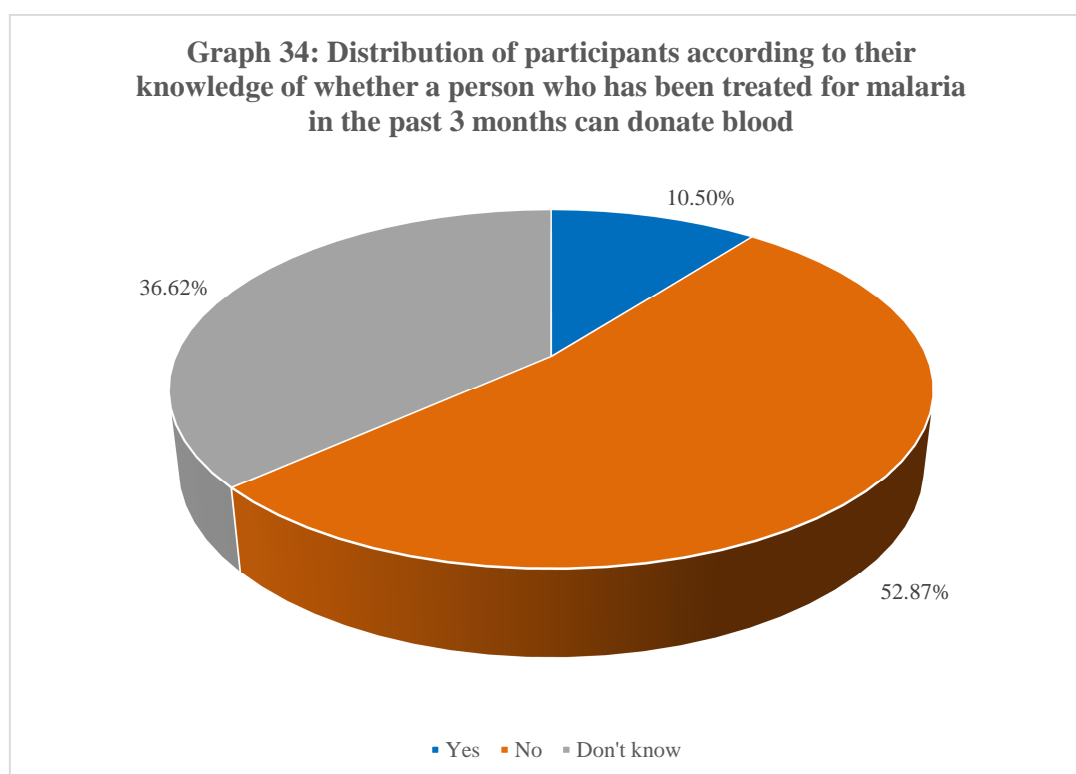
Can a person treated for Rabies/ Hepatitis B in the past one year can donate blood	Distribution (n=800)	
	Number	Percentage
Yes	68	8.5
No	444	55.5
Don't know	288	36
Total	800	100.00



In this study, a greater portion of the participants, 55.50% answered correctly that a person treated for Rabies/ Hepatitis B in the past one year cannot donate blood, 36% of stated don't know and 8.50% stated that a person treated for Rabies/ Hepatitis B in the past one year can donate blood.

Table 34: Distribution of participants according to their knowledge of whether a person treated for malaria in the past 3 months can donate blood

Can a person treated for malaria in the last 3 months donate blood	Distribution (n=800)	
	Number	Percentage
Yes	84	10.5
No	423	52.87
Don't know	293	36.62
Total	800	100.00

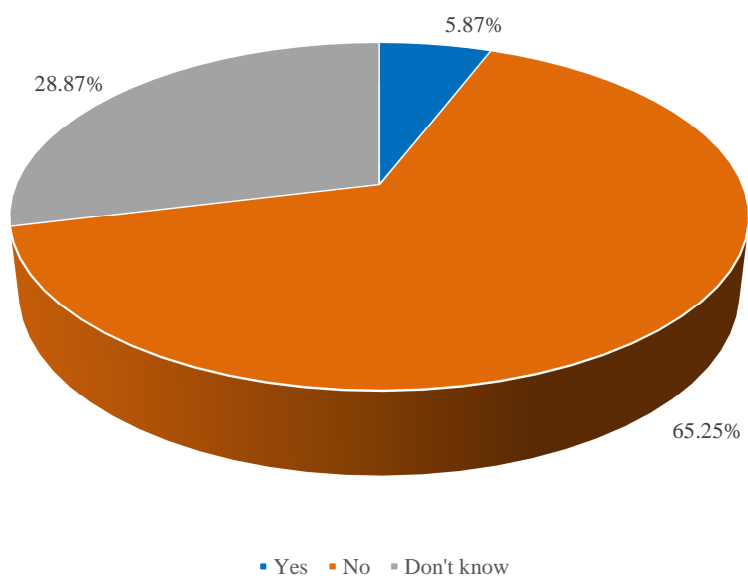


In this study, greater part of the participants, 52.87% answered correctly that a person treated for malaria within the last 3 months cannot donate blood, 36.62% mentioned don't know and 10.50% mentioned that a person treated for malaria within the last 3 months can donate blood.

Table 35: Distribution of participants according to their knowledge of whether a pregnant/lactating women can donate blood

Can a pregnant/lactating women donate blood	Distribution (n=800)	
	Number	Percentage
Yes	47	5.87
No	522	65.25
Don't know	231	28.87
Total	800	100.00

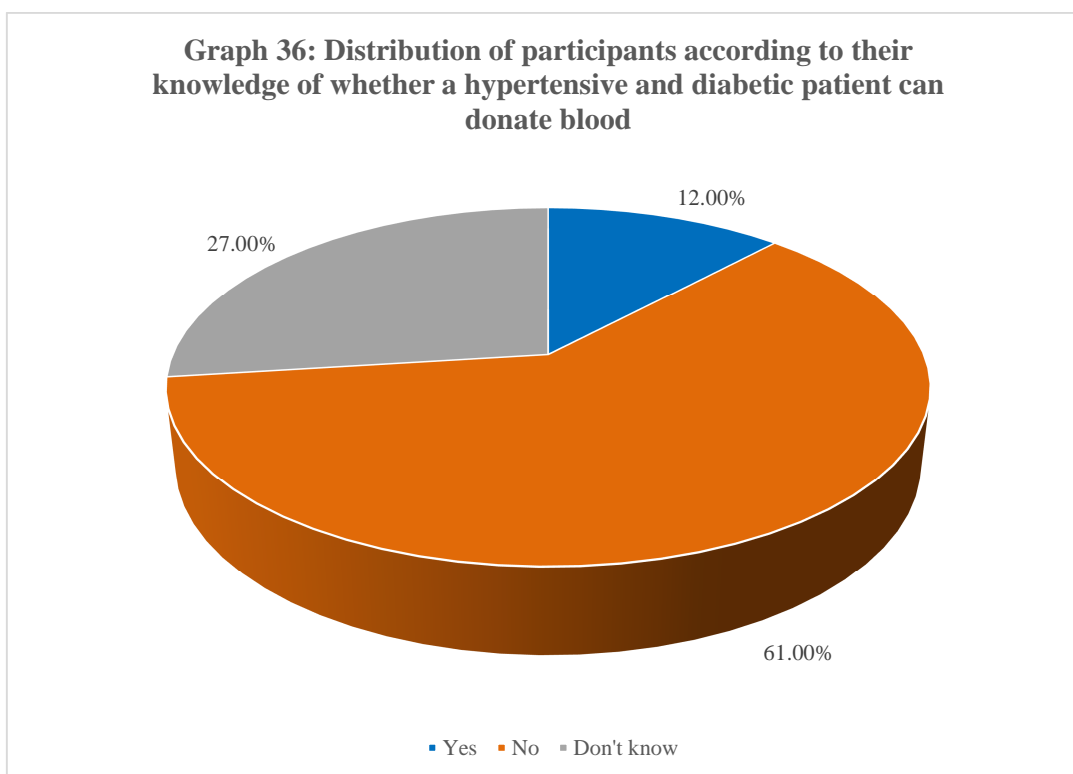
Graph 35: Distribution of participants according to their knowledge of whether a pregnant/lactating women can donate blood



In this study, majority of the participants, 65.25% answered correctly that a pregnant/lactating women cannot donate blood, 28.87% stated don't know and 5.87% stated that a pregnant/lactating women can donate blood.

Table 36: Distribution of participants according to their knowledge of whether a hypertensive and diabetic patient can donate blood

Can a hypertensive and diabetic patient donate blood	Distribution (n=800)	
	Number	Percentage
Yes	96	12
No	488	61
Don't know	216	27
Total	800	100.00

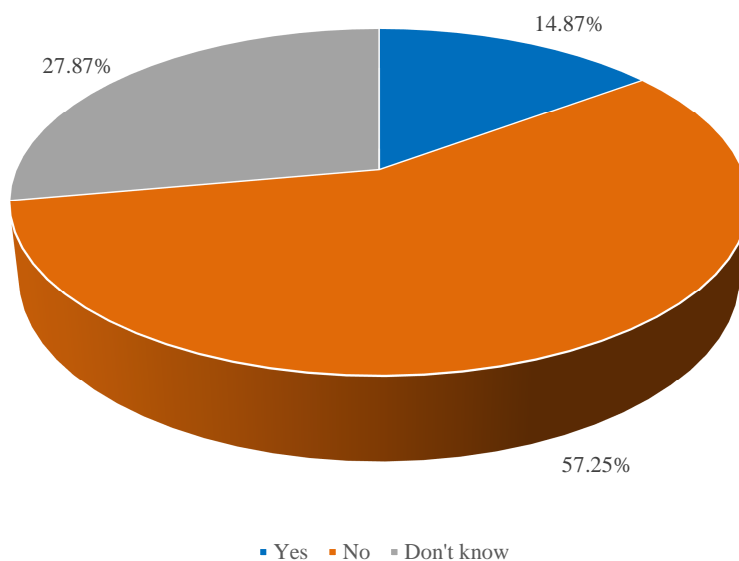


In this study, a greater part of the participants, 61% answered correctly that a hypertensive and diabetic patient cannot donate blood, 27% mentioned don't know and 12% mentioned that a hypertensive and diabetic patient can donate blood.

Table 37: Distribution of participants according to their knowledge of whether a person with heart disease can donate blood

Can a person with heart disease donate blood	Distribution (n=800)	
	Number	Percentage
Yes	119	14.87
No	458	57.25
Don't know	223	27.87
Total	800	100.00

Graph 37: Distribution of participants according to their knowledge of whether a person with heart disease can donate blood

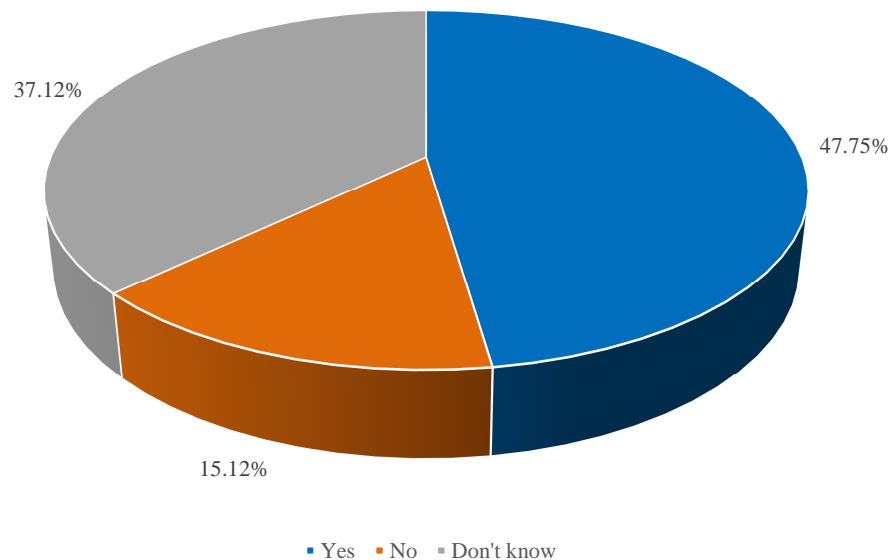


In this study, majority of the participants, 57.25% answered correctly that a person with heart disease cannot donate blood, 27.87% stated don't know and 14.87% stated that a person with heart disease can donate blood.

Table 38: Distribution of participants according to their knowledge of whether an average blood donation process last for 20 minutes

Does an average blood donation process last for 20 minutes	Distribution (n=800)	
	Number	Percentage
Yes	382	47.75
No	121	15.12
Don't know	297	37.12
Total	800	100.00

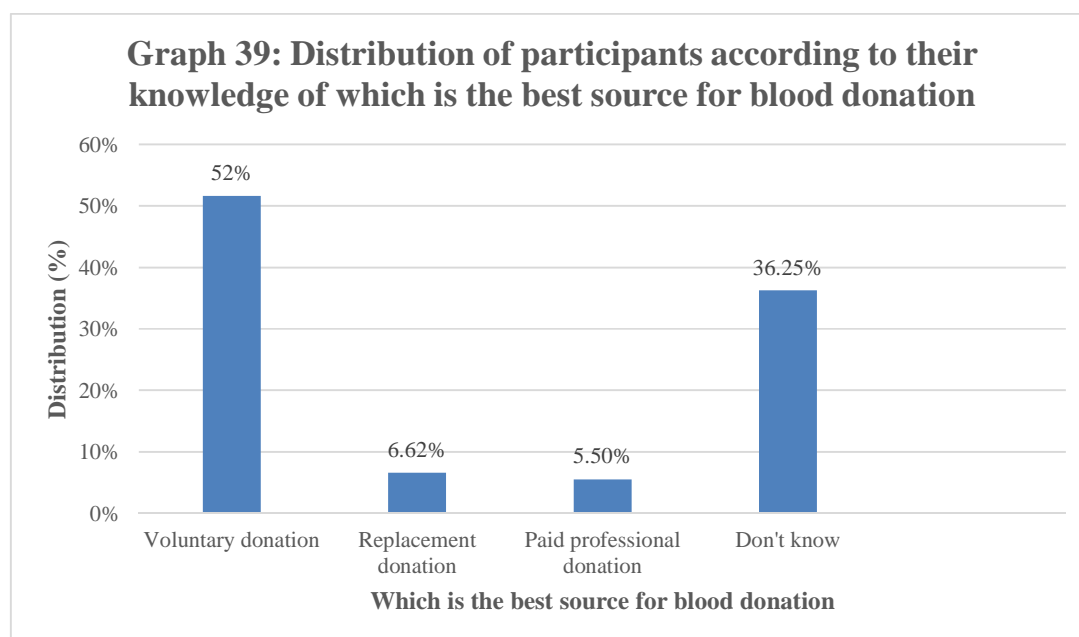
Graph 38: Distribution of participants according to their knowledge of whether an average blood donation process last for 20 minutes



In this study, a higher portion of the participants, 47.75% answered correctly that an average blood donation process last for 20 minutes, 37.12% answered don't know and 15.12% answered that an average blood donation process does not last for 20 minutes.

Table 39: Distribution of participants according to their knowledge of which is the best source for blood donation

Which is the best source for blood donation	Distribution (n=800)	
	Number	Percentage
Voluntary donation	413	51.62
Replacement donation	53	6.62
Paid professional donation	44	5.5
Don't know	290	36.25
Total	800	100.00

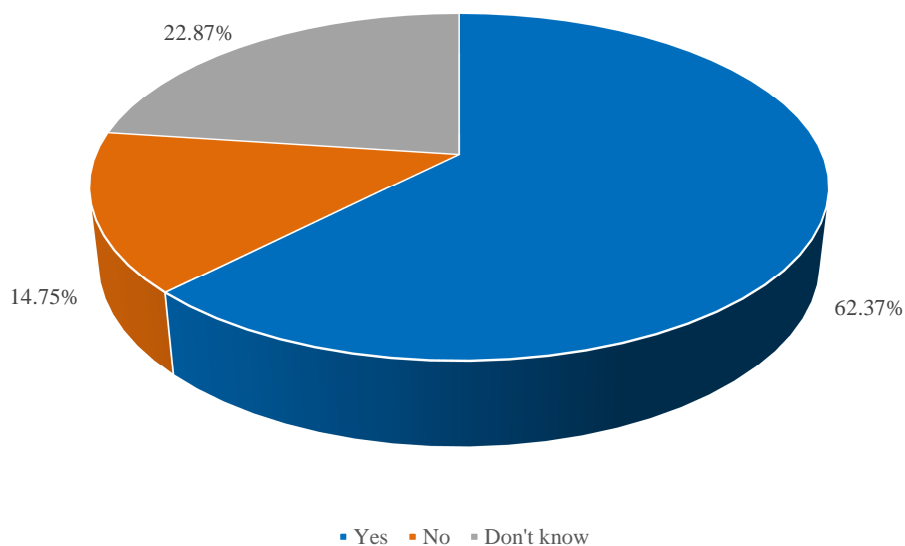


In this study, a greater part of participants, 52% answered correctly that donation voluntarily is the best source for blood donation, 36.25% stated don't know, 6.62% stated replacement donation as the best source for blood donation and 5.50% stated paid professional donation as the best source for blood donation.

Table 40: Distribution of participants according to their knowledge of whether they know the benefits of donating blood

Do you know the advantages of blood donation	Distribution (n=800)	
	Number	Percentage
Yes	499	62.37
No	118	14.75
Don't know	183	22.87
Total	800	100.00

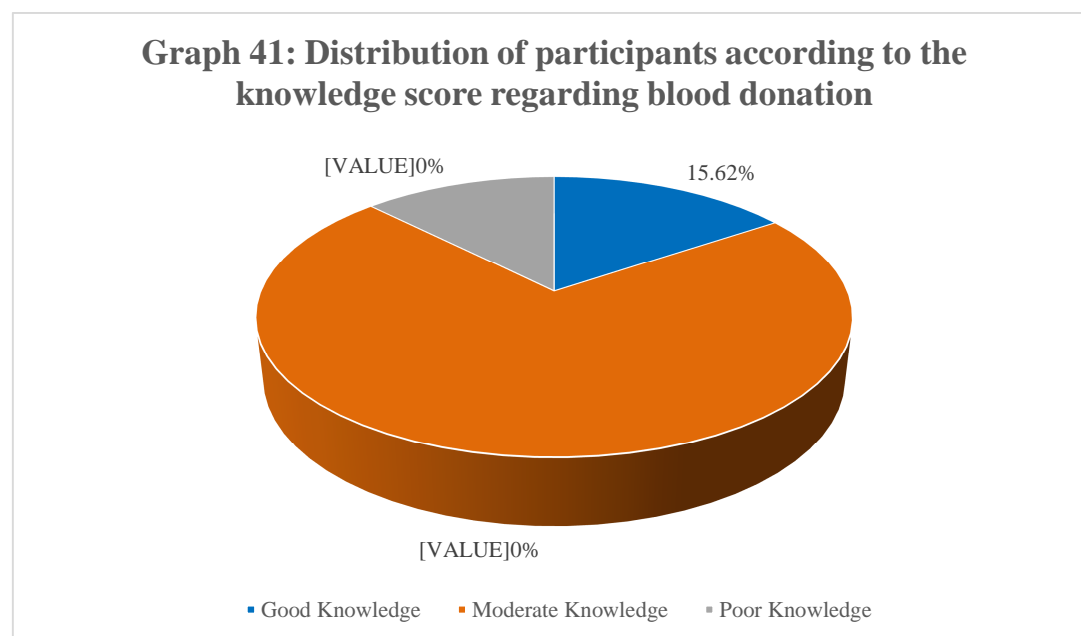
Graph 40: Distribution of participants according to their knowledge of whether they know the benefits of donating blood



In this study, majority of the participants, 62.37% answered that they know the benefits of donating blood, 22.87% stated don't know and 14.75% stated that they don't know the benefits of donating blood.

Table 41: Distribution of participants according to the knowledge score

Knowledge score	Number	Percentage
Good (27-32)	125	15.62
Moderate (10-26)	575	71.90
Poor (0-9)	100	12.50
Total	800	100

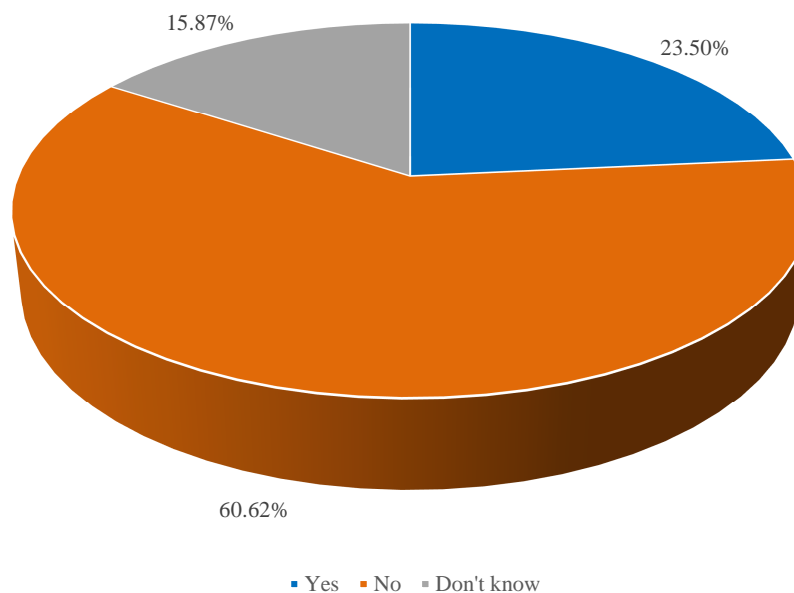
Graph 41: Distribution of participants according to the knowledge score regarding blood donation

In this study, the mean knowledge score was 18.02, with standard deviation of 7.50. Amid the participants, 15.6% had good knowledge, a greater part 71.9% had moderate knowledge and 12.5% had poor knowledge.

Table 42: Distribution of participants according to their attitude of can blood donation make a person weak

Can blood donation make a person weak	Distribution (n=800)	
	Number	Percentage
Yes	188	23.50
No	485	60.62
Don't know	127	15.87
Total	800	100.00

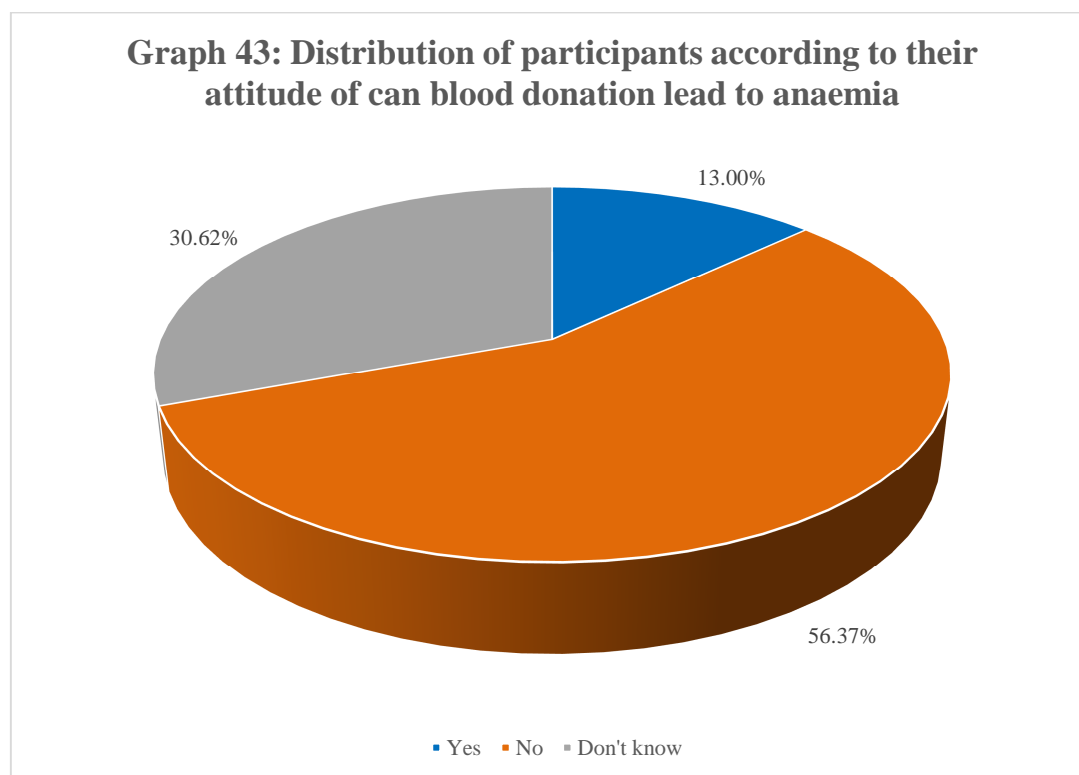
Graph 42: Distribution of participants according to their attitude of can blood donation make a person weak



In this study, majority of the participants, 60.62% possessed an optimistic outlook that blood donation cannot make a person weak, 23.50% possessed a pessimistic outlook that blood donation can make a person weak and 15.87% of the participants answered don't know.

Table 43: Distribution of participants according to their attitude of can blood donation lead to anaemia

Can blood donation lead to anaemia	Distribution (n=800)	
	Number	Percentage
Yes	104	13
No	451	56.37
Don't know	245	30.62
Total	800	100.00

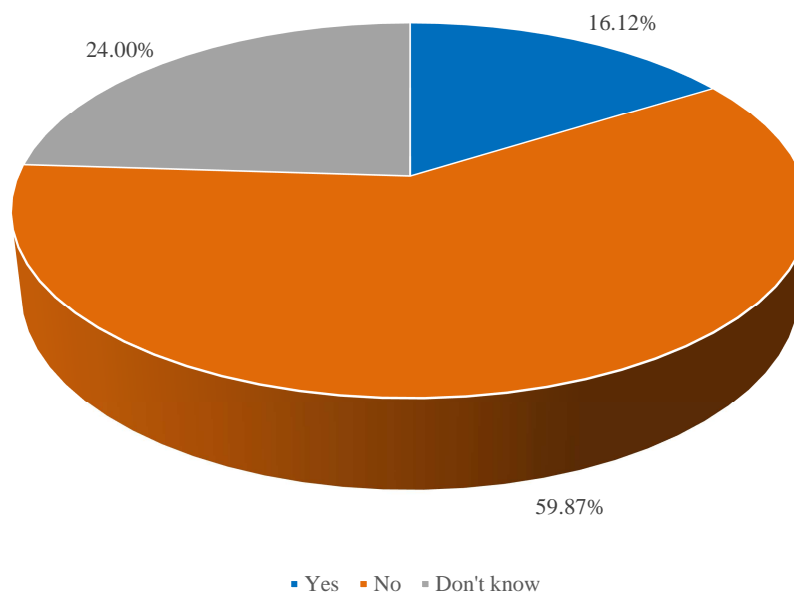


In this study, majority of the participants, 56.37% held an optimistic outlook that blood donation does not lead to anaemia, 30.62% stated don't know and 13% held a pessimistic outlook that blood donation leads to anaemia.

Table 44: Distribution of participants according to their attitude of can blood donation lower immunity

Can blood donation lower immunity	Distribution (n=800)	
	Number	Percentage
Yes	129	16.12
No	479	59.87
Don't know	192	24
Total	800	100.00

Graph 44: Distribution of participants according to their attitude of can blood donation lower immunity

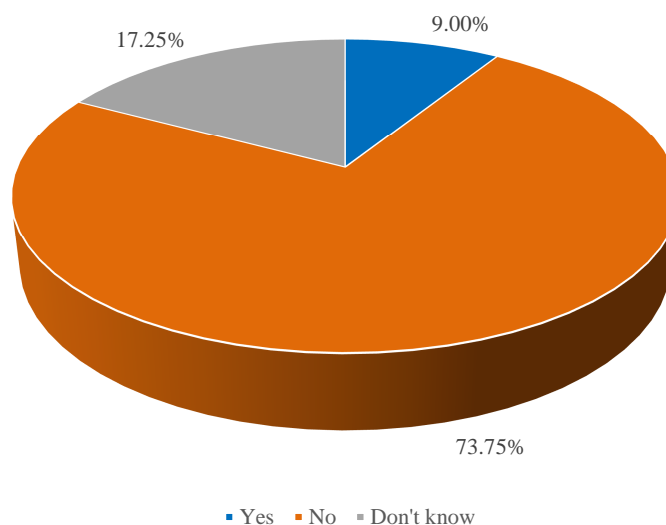


In this study, majority of the participants, 59.87% mentioned that blood donation does not lower immunity, 24% mentioned don't know and 16.12% mentioned that blood donation lowers immunity.

Table 45: Distribution of participants according to their attitude of whether blood should be donated only to family members, relatives and friends

Should blood be donated only to family members, relatives and friends	Distribution (n=800)	
	Number	Percentage
Yes	72	9
No	590	73.75
Don't know	138	17.25
Total	800	100.00

Graph 45: Distribution of participants according to their attitude of whether blood should be donated only to family members, relatives and friends

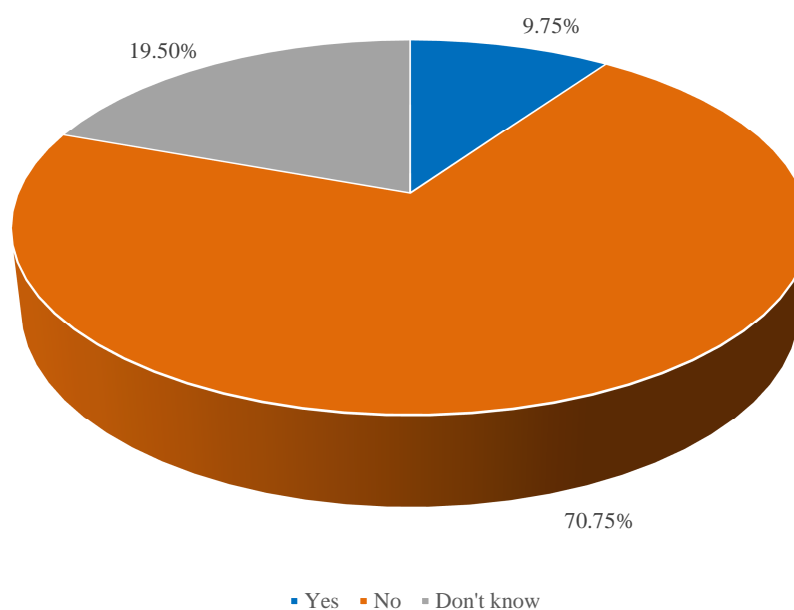


In this study, a greater portion of participants, 73.75% answered positively that blood should not be donated only to family members, relatives and friends, 17.25% mentioned don't know and 9% answered negatively that blood should be donated only to family members, relatives and friends.

Table 46: Distribution of participants according to their attitude of whether women should not donate blood

Should women not donate blood	Distribution (n=800)	
	Number	Percentage
Yes	78	9.75
No	566	70.75
Don't know	156	19.5
Total	800	100.00

Graph 46: Distribution of participants according to their attitude of whether women should not donate blood

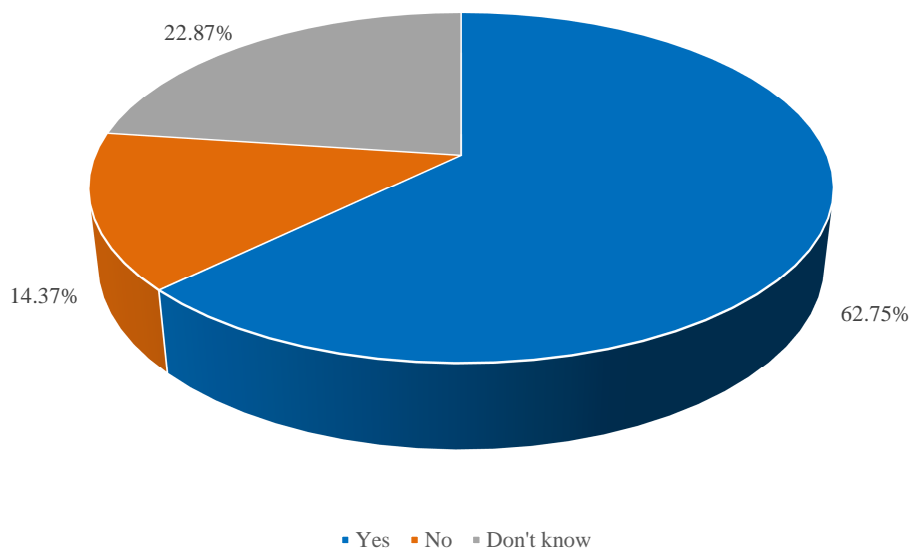


In this study, majority, 70.75% answered positively that women should donate blood, 19.50% of the participants answered don't know and 9.75% answered negatively that women should not donate blood.

Table 47: Distribution of participants according to their attitude of whether blood donation is a noble work

Is blood donation a noble work	Distribution (n=800)	
	Number	Percentage
Yes	502	62.75
No	115	14.37
Don't know	183	22.87
Total	800	100.00

Graph 47: Distribution of participants according to their attitude of whether blood donation is a noble work

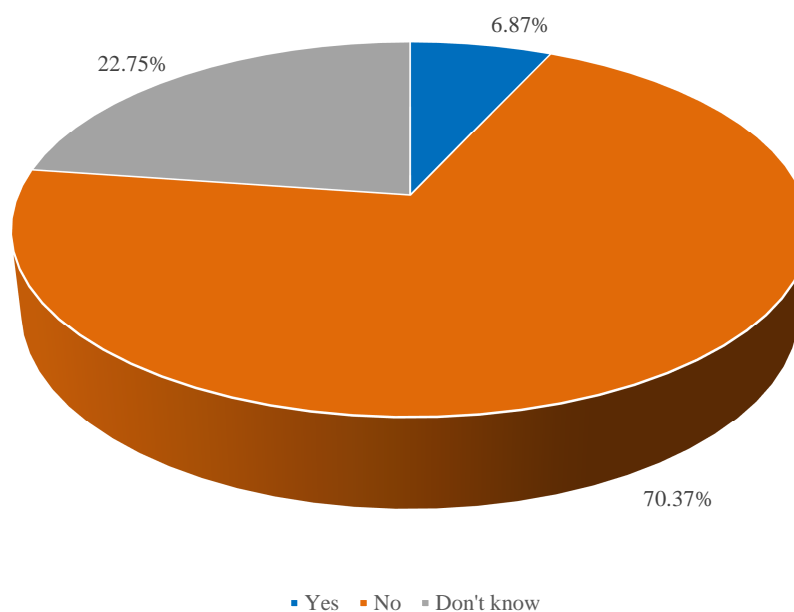


In this study, majority of the participants, 62.75% had an optimistic outlook stating donating blood is a noble work, 22.87% mentioned don't know and 14.37% had a pessimistic outlook stating donating blood is not a noble work.

Table 48: Distribution of participants according to their attitude of whether blood donation leads to cancer

Does blood donation lead to cancer	Distribution (n=800)	
	Number	Percentage
Yes	55	6.87
No	563	70.37
Don't know	182	22.75
Total	800	100.00

Graph 48: Distribution of participants according to their attitude of whether blood donation leads to cancer

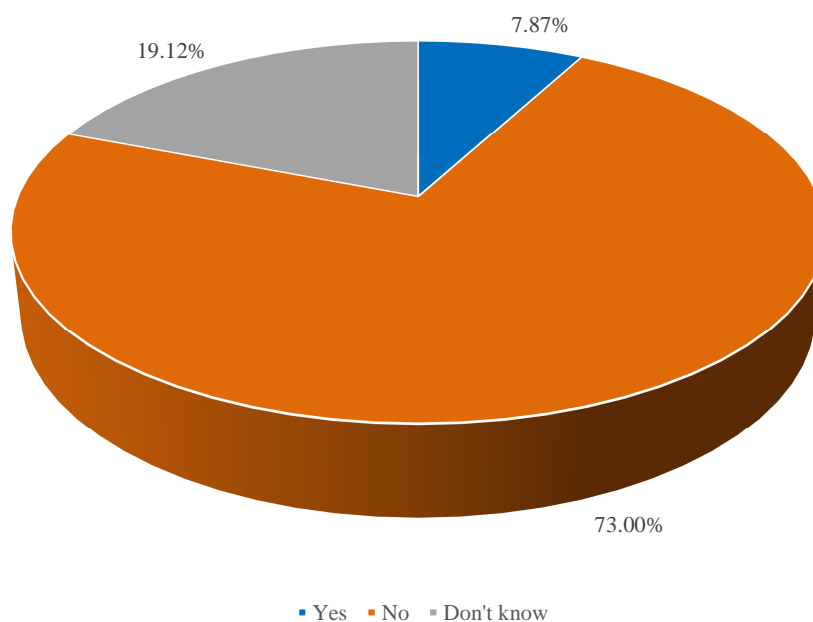


In this study, majority of the participants, 70.37% stated that blood donation does not lead to cancer, 22.75% stated don't know and 6.87% stated that blood donation leads to cancer.

Table 49: Distribution of participants according to their attitude of whether blood donation is harmful to health

Is blood donation harmful to health	Distribution (n=800)	
	Number	Percentage
Yes	63	7.87
No	584	73
Don't know	153	19.12
Total	800	100.00

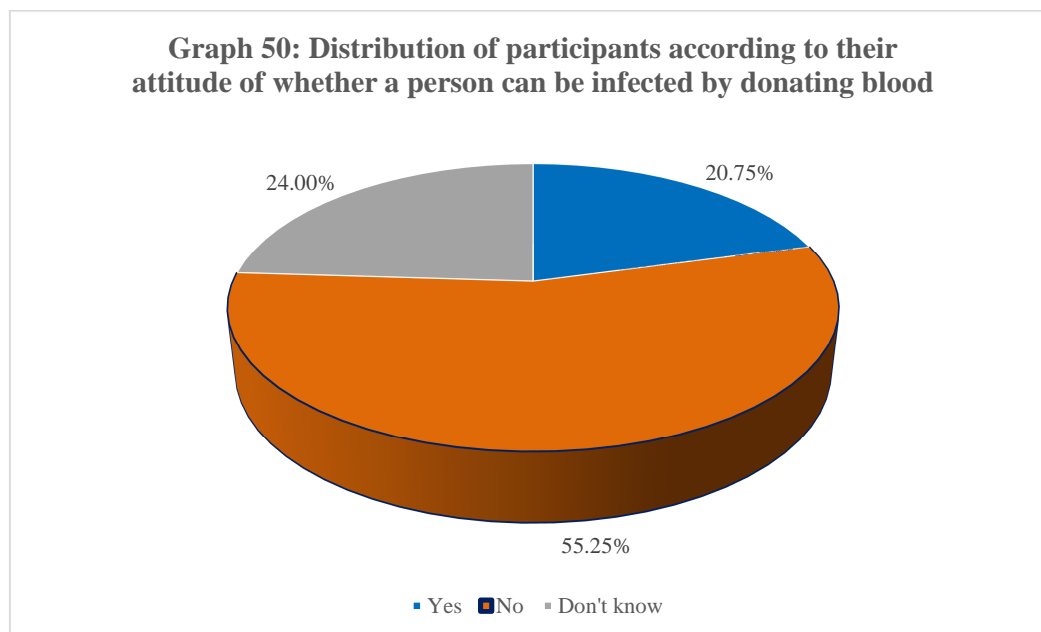
Graph 49: Distribution of participants according to their attitude of whether blood donation is harmful to health



In this study, majority of the participants, 73% expressed a positive attitude stating donating blood doesn't cause harm to health, 19.12% of the participants answered don't know and 7.87% expressed a negative attitude stating donating blood does cause harm to health.

Table 50: Distribution of participants according to their attitude of whether a person can be infected by donating blood

Can a person contract infection by donating blood	Distribution (n=800)	
	Number	Percentage
Yes	166	20.75
No	442	55.25
Don't know	192	24
Total	800	100.00

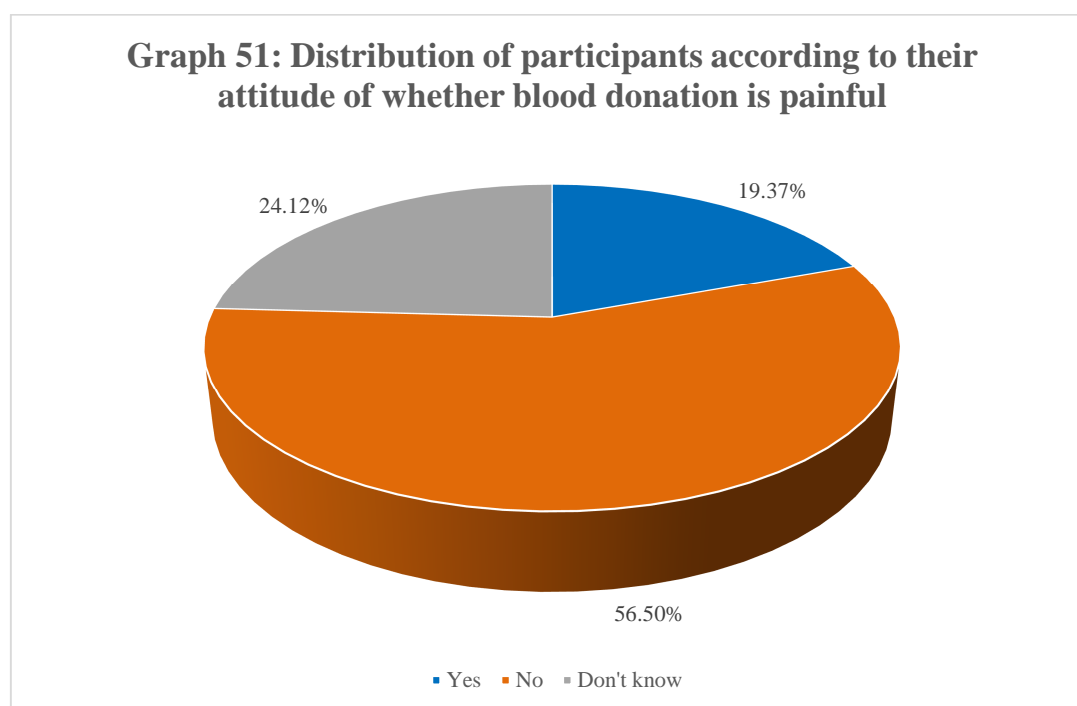


In this study, majority, 55.25% mentioned that a person cannot contract infection by donating blood, 24% of the participants mentioned don't know and 20.75% mentioned that a person can contract infection by donating blood.

Table 51: Distribution of participants according to their attitude of whether blood donation is painful

Is blood donation painful	Distribution (n=800)	
	Number	Percentage
Yes	155	19.37
No	452	56.50
Don't know	193	24.12
Total	800	100.00

Graph 51: Distribution of participants according to their attitude of whether blood donation is painful

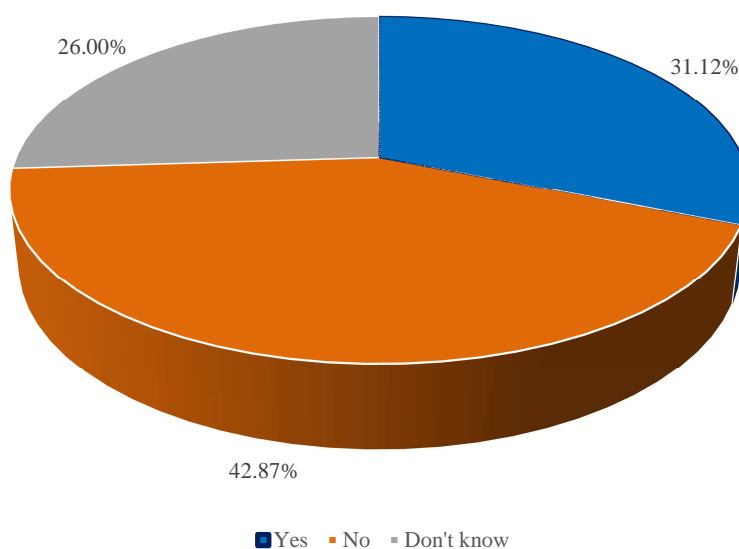


In this study, majority, 56.50% stated that the procedure of donating blood not painful, 24.12% of the participants stated don't know and 19.37% stated that the procedure of donating blood is painful.

Table 52: Distribution of participants according to their attitude of whether they would donate blood if they are paid for it

Would you donate blood if you are paid for it	Distribution (n=800)	
	Number	Percentage
Yes	249	31.12
No	343	42.87
Don't know	208	26
Total	800	100.00

Graph 52: Distribution of participants according to their attitude of whether they would donate blood if they are paid for it

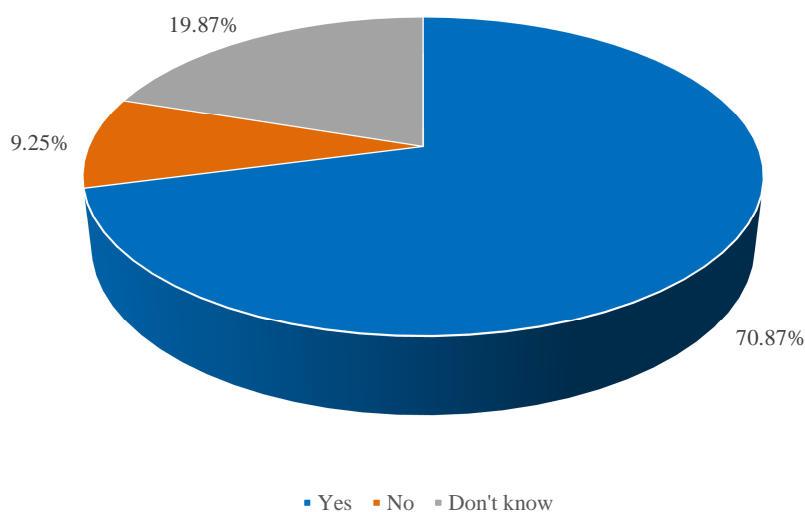


In this study, greater portion of participants, 42.87% expressed a positive attitude that they were interested to donate blood without being paid for it, 31.12% expressed a negative attitude that they were interested to donate blood if they are paid for it and 26% stated don't know.

Table 53: Distribution of participants according to their attitude of whether they would like to donate blood to strangers who are in need

Would you be interested to donate blood to help strangers in need	Distribution (n=800)	
	Number	Percentage
Yes	567	70.87
No	74	9.25
Don't know	159	19.87
Total	800	100.00

Graph 53: Distribution of participants according to their attitude of whether they would like to donate blood to strangers who are in need

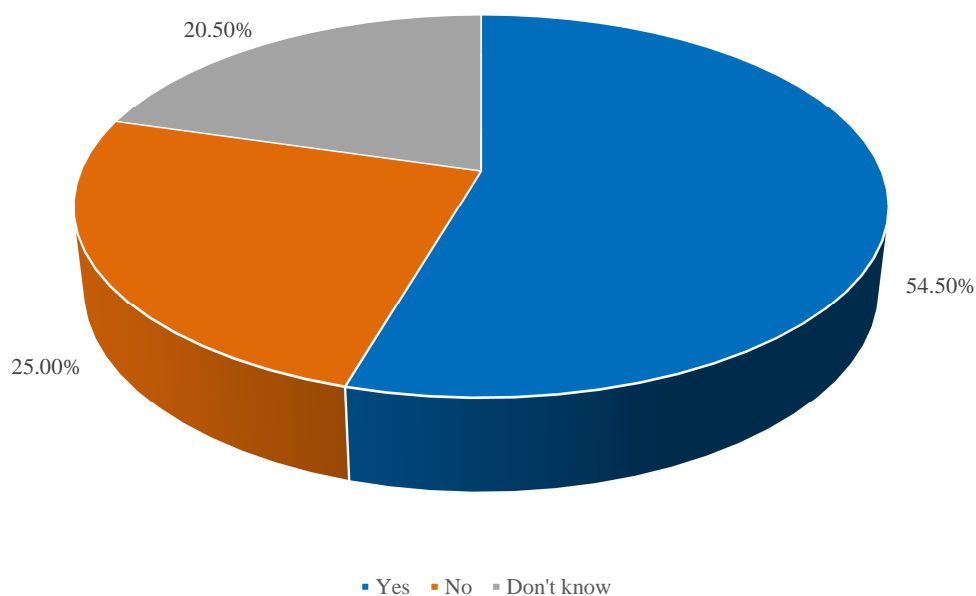


In this study, a greater part of participants, 70.87% stated that they were interested to donate blood to help strangers in need, 19.87% of the participants stated don't know and 9.25% of the participants stated that they were not interested to donate blood to help strangers in need.

Table 54: Distribution of participants according to their attitude of whether blood donation causes temporary weakness/ fainting

Does blood donation cause temporary weakness/ fainting	Distribution (n=800)	
	Number	Percentage
Yes	436	54.5
No	200	25
Don't know	164	20.5
Total	800	100.00

Graph 54: Distribution of participants according to their attitude of whether blood donation causes temporary weakness/fainting

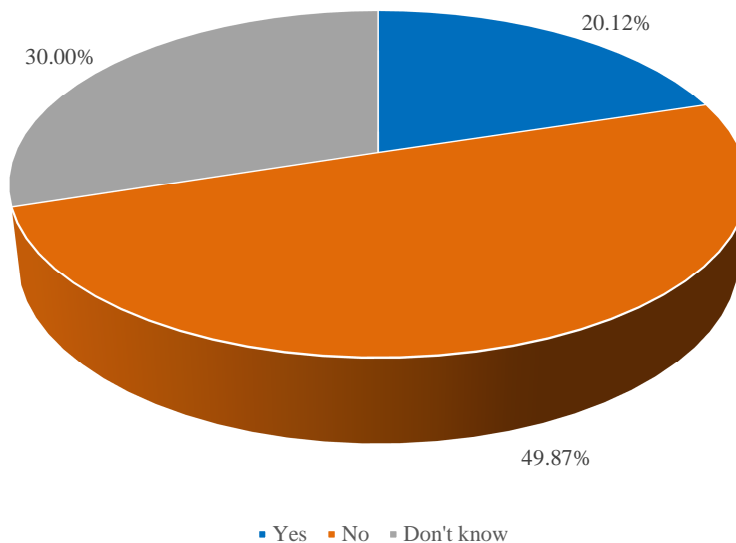


In this study, a greater portion of participants, 54.50% correctly answered that blood donation causes temporary weakness/fainting, 25% answered that blood donation does not cause temporary weakness/fainting and 20.50% answered don't know.

Table 55: Distribution of participants according to their attitude of whether they feel that too much blood will be collected during the blood donation process

Do you feel that too much blood will be collected during the blood donation process	Distribution (n=800)	
	Number	Percentage
Yes	161	20.12
No	399	49.87
Don't know	240	30
Total	800	100.00

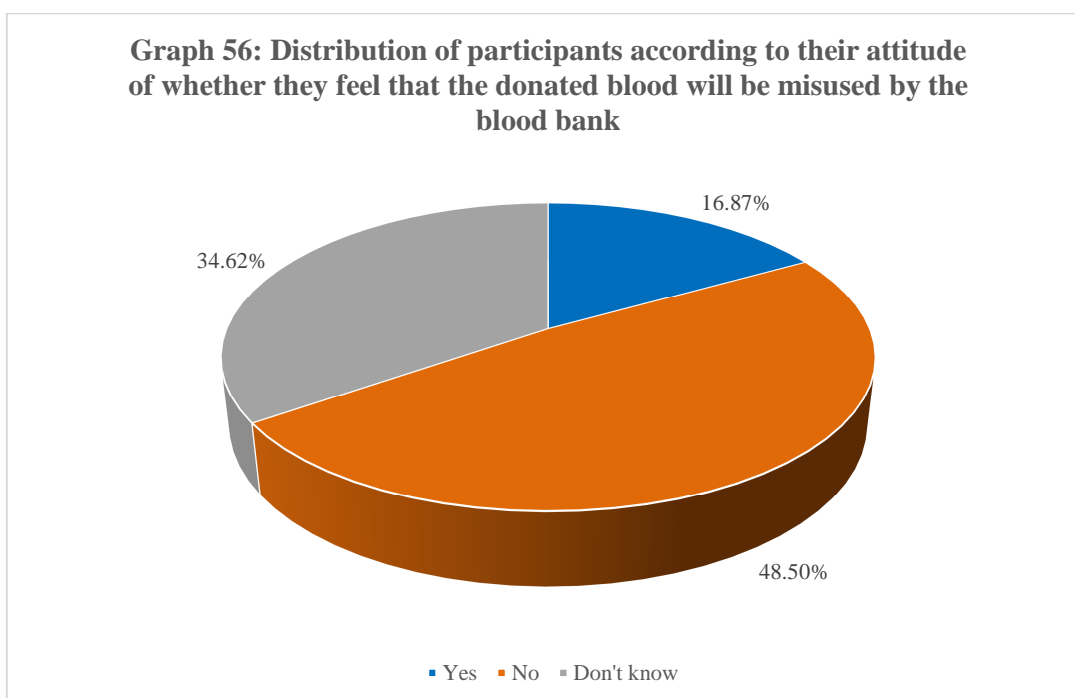
Graph 55: Distribution of participants according to their attitude of whether they feel that too much blood will be collected during the blood donation process



In this study, a larger part of participants, 49.87% had an optimistic outlook that too much blood will not be collected during the blood donation procedure, 30% mentioned don't know and 20.12% had a pessimistic outlook that too much blood will be collected during the blood donation procedure.

Table 56: Distribution of participants according to their attitude of whether they feel that the donated blood will be misused by the blood bank

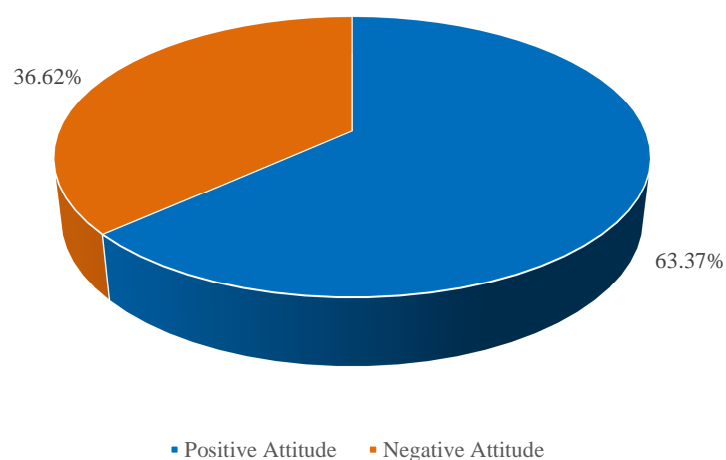
Do you feel the collected blood will be misused by the blood bank	Distribution (n=800)	
	Number	Percentage
Yes	135	16.87
No	388	48.50
Don't know	277	34.62
Total	800	100.00



In this study, amid the participants, majority, 48.50% had an optimistic outlook that the collected blood will not be misused by the blood bank, 34.62% answered don't know and 16.87% had a pessimistic outlook that the collected blood will be misused by the blood bank.

Table 57: Distribution of participants according to the attitude score

Attitude score	Number	Percentage
Positive (≥ 9.06)	507	63.37
Negative (< 9.06)	293	36.62
Total	800	100

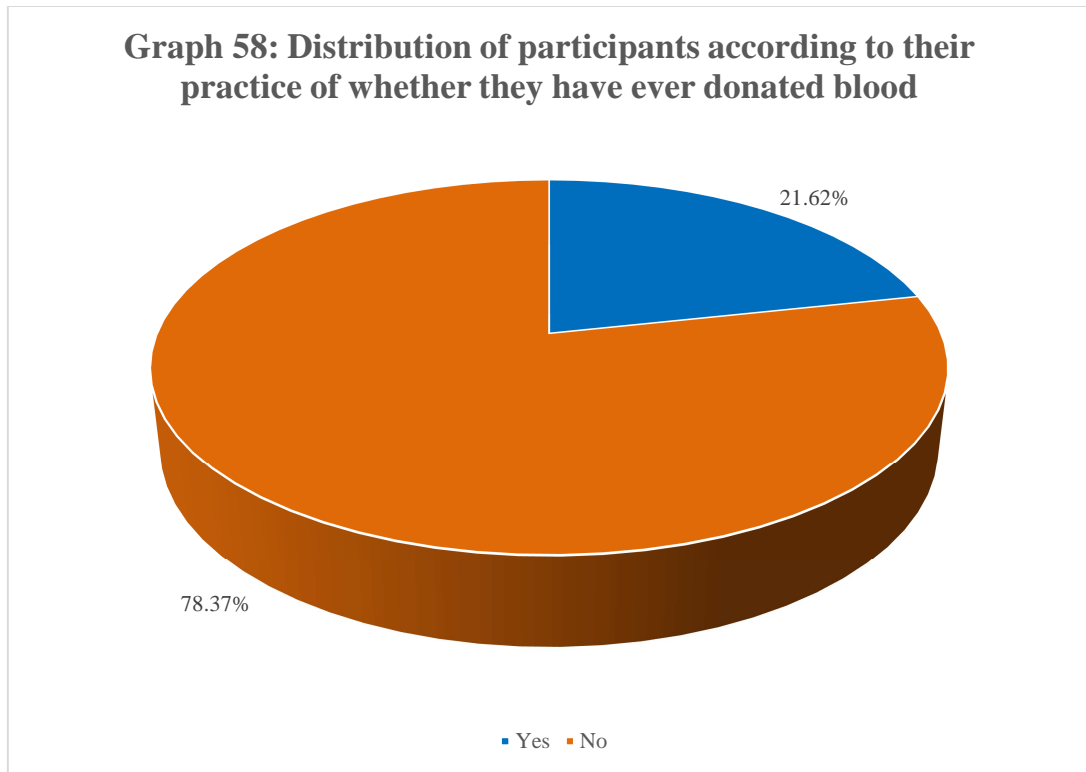
Graph 57: Distribution of participants according to the attitude score regarding blood donation

In this study, the mean attitude score was 9.06, with standard deviation of 4.41. A greater portion of participants 63.37% held positive attitude and 36.62% held negative attitude

Table 58: Distribution of participants according to their practice of whether they have ever donated blood

Have you ever donated blood	Distribution (n=800)	
	Number	Percentage
Yes	173	21.62
No	627	78.37
Total	800	100.00

Graph 58: Distribution of participants according to their practice of whether they have ever donated blood

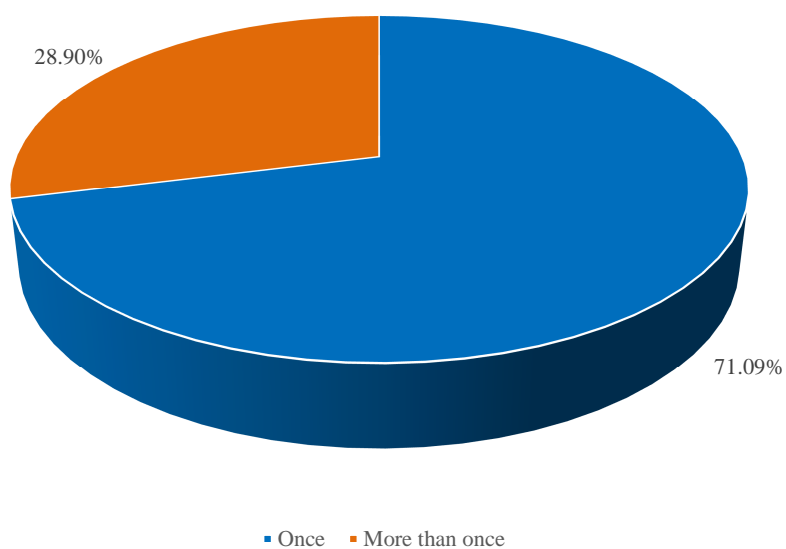


In this study, vast portion of participants, 78.37% had never donated blood and 21.62% did donate blood.

Table 59: Distribution of participants according to their practice of whether if they had ever donated blood in the past, how many times had they donated

If you have ever donated blood in the past, how many times have you donated	Distribution (n=173)	
	Number	Percentage
Once	123	71.09
More than once	50	28.90
Total	173	100.00

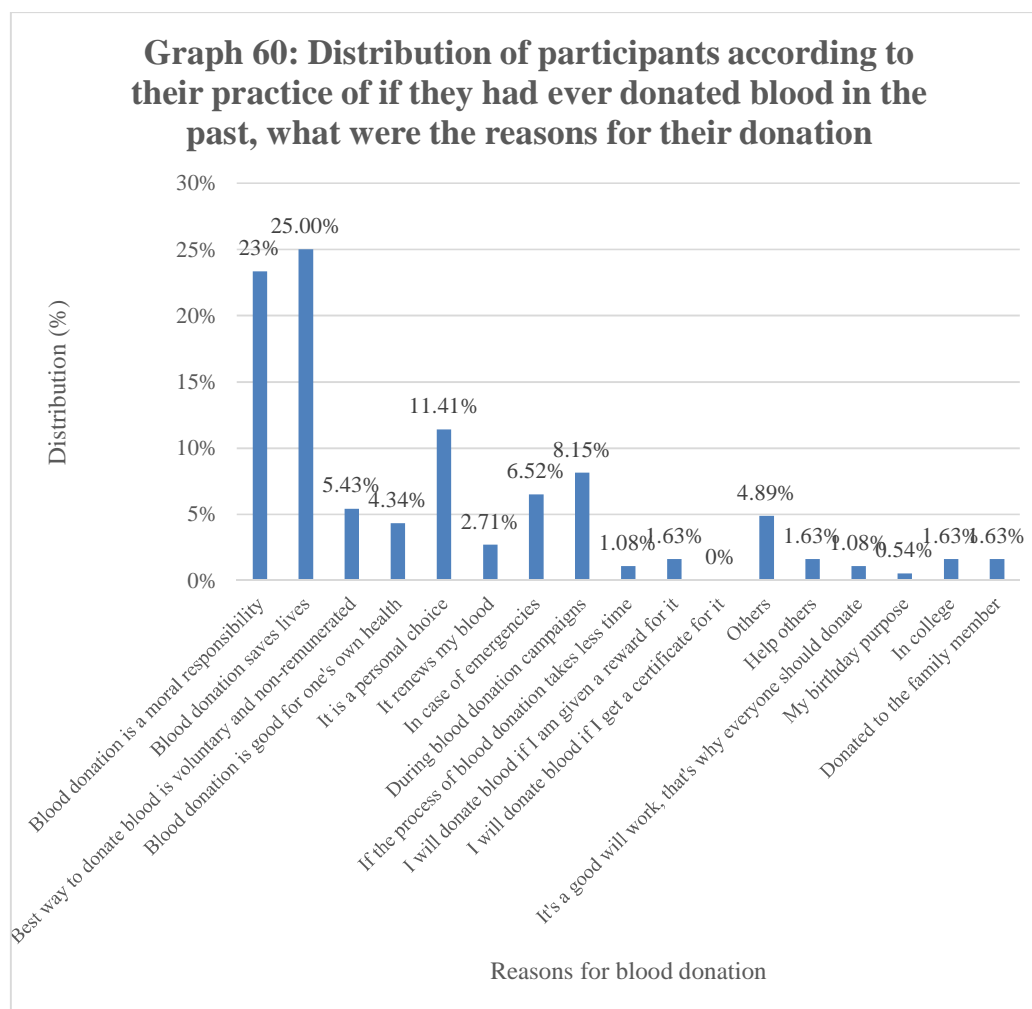
Graph 59: Distribution of participants according to their practice of whether if they had ever donated blood in the past, how many times had they donated



In this study, a greater portion of participants, 71.09% had donated blood once and 28.90% donated blood more than once.

Table 60: Distribution of participants according to their practice if they had ever donated blood in the past, what were the reasons for their donation

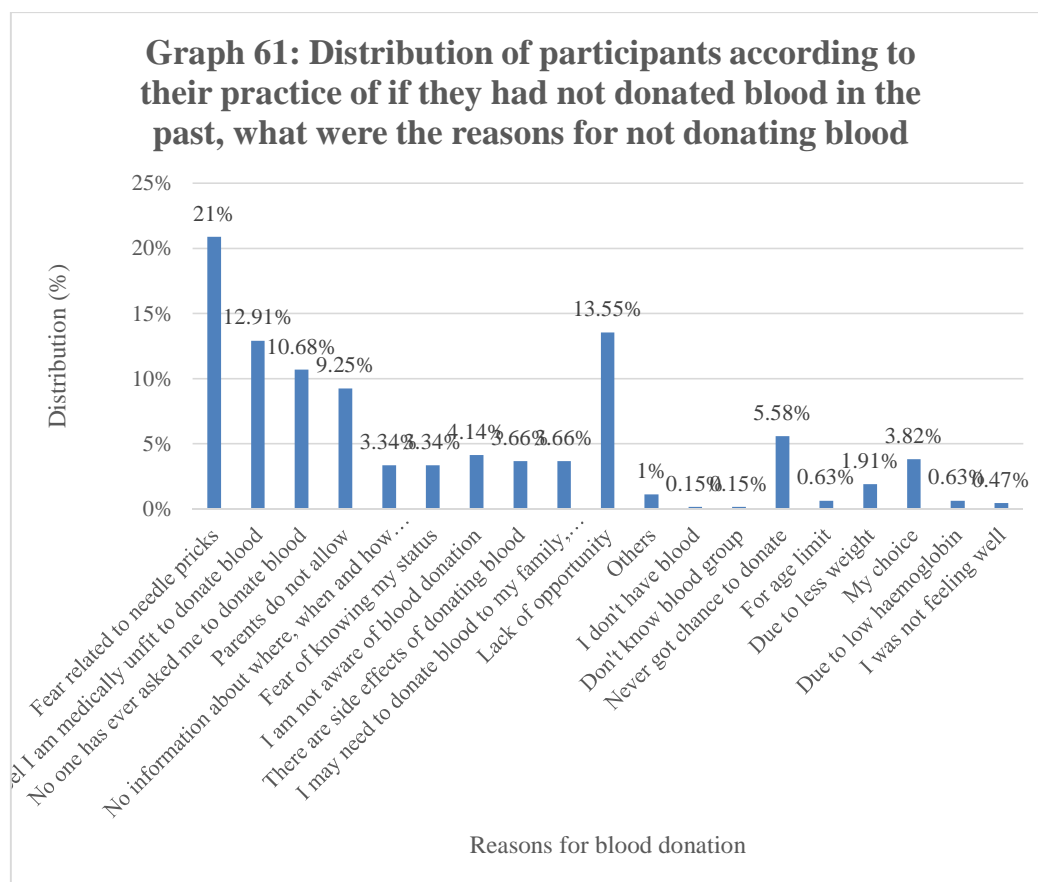
If you have previously donated blood, what were your reasons for donation	Distribution (n=173)	
	Number	Percentage
Blood donation is a moral responsibility	43	23.36
Blood donation saves lives	47	25
Best way to donate blood is voluntary and non-remunerated	10	5.43
Blood donation is good for one's own health	8	4.34
It is a personal choice	21	11.41
It renews my blood	5	2.71
In case of emergencies	13	6.52
During blood donation campaigns	15	8.15
If the process of blood donation takes less time	2	1.08
I will donate blood if I am given a reward for it	3	1.63
I will donate blood if I get a certificate for it	0	0
Others	9	4.89
Help others	3	1.63
It's a good will work, that's why everyone should donate	2	1.08
My birthday purpose	1	0.54
In college	3	1.63
Donated to the family member	3	1.63
Total	188	100.00



In this study, amid those who had donated blood, majority, 25% stated blood donation saves lives, 23% stated blood donation is a moral responsibility, 11.41% stated it is a personal choice, 8.15% stated during blood donation campaigns, 6.52% stated in case of emergencies, 5.43% stated best way to donate blood is voluntary and non-remunerated, 4.89% stated others, 4.34% stated blood donation is good for one's own health, 2.71% stated it renews their blood, 1.63% stated I will donate blood if I am given a reward for it, 1.63% stated to help others, 1.63% stated donated blood in college, 1.63% stated donated to the family member, 1.08% stated if the process of blood donation takes less time, 1.08% stated it's a good will work, that's why everyone should donate and 0.54% stated my birthday purpose.

Table 61: Distribution of participants according to their practice if they had not donated blood in the past, what were the reasons for not donating blood

If you have not donated previously, what are the reasons for not doing so?	Distribution (n=800)	
	Number	Percentage
Fear related to needle pricks	127	20.25
I feel I am medically unfit to donate blood	81	12.91
No one has ever asked me to donate blood	65	10.68
Parents do not allow	58	9.25
No information about where, when and how to donate blood	21	3.34
Fear of knowing my status	21	3.34
I am not aware of blood donation	26	4.14
There are side effects of donating blood	23	3.66
I may need to donate blood to my family, relatives and friends in the future	23	3.66
Lack of opportunity	85	13.55
Others	7	1.11
I don't have blood	1	0.15
Don't know blood group	1	0.15
Never got chance to donate	35	5.58
For age limit	4	0.63
Due to less weight	12	1.91
My choice	24	3.82
Due to low heamoglobin	4	0.63
I was not feeling well	3	0.47
Total	627	100.00

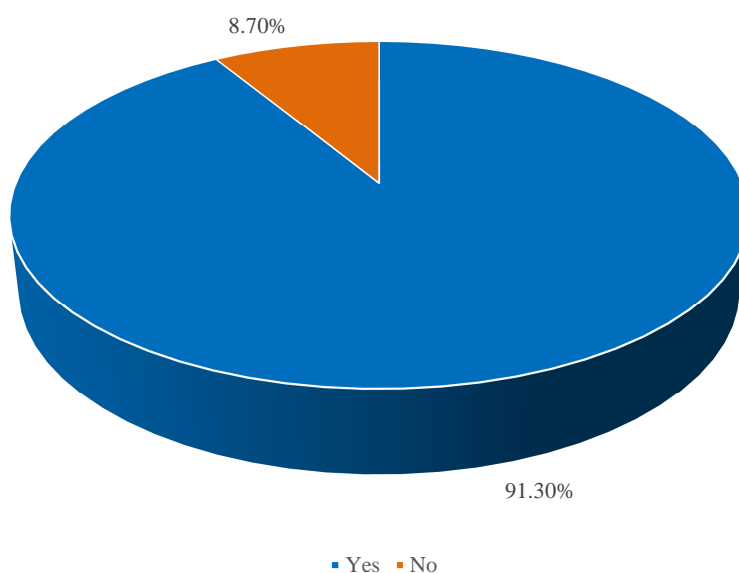


In this study, amid the participants who had not donated blood, majority, 21% stated fear related to needle pricks, 13.55% stated lack of opportunity, 12.91% stated I feel I am medically unfit to donate blood, 10.68% stated no one has ever asked me to donate blood, 9.25% stated parents do not allow, 5.58% stated never got chance to donate, 4.14% stated I am not aware of blood donation, 3.82% stated my choice, 3.66% stated there are side effects of donating blood, 3.66% stated I may need to donate blood to my family, relatives and friends in the future, 3.34% stated no information about where, when and how to donate blood, 3.34% stated fear of knowing my status, 1.91% stated due to less weight, 1.11% stated others, 0.63% stated for age limit and 0.63% stated due to low haemoglobin, 0.47% stated I was not feeling well, 0.15% stated I don't have blood and 0.15% stated don't know blood group.

Table 62: Distribution of participants according to their practice of whether if they had donated blood in the past, how was their experience

If you have donated blood in the past, how was your experience	Distribution (n=173)	
	Number	Percentage
Good	158	91.30
Bad	15	8.70
Total	173	100.00

Graph 62: Distribution of participants according to their practice of if they had donated blood in the past, how was their experience

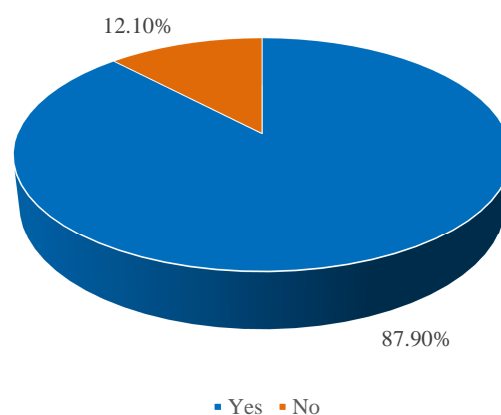


In this study, amid the group who donated, majority, 91.30% answered that they experienced good when they had previously donated and 8.70% of answered that they experienced bad when they had previously donated.

Table 63: Distribution of participants according to their practice of whether if they had donated blood in the past, did they feel happy with the safety measures taken by the medical attendant during the blood donation process

Did you feel happy with the safety measures taken by the medical attendant during the blood donation process	Distribution (n=173)	
	Number	Percentage
Yes	152	87.90
No	21	12.10
Total	173	100.00

Graph 63: Distribution of participants according to their practice of if they had donated blood in the past, did they feel happy with the safety measures taken by the medical attendant during the blood donation process

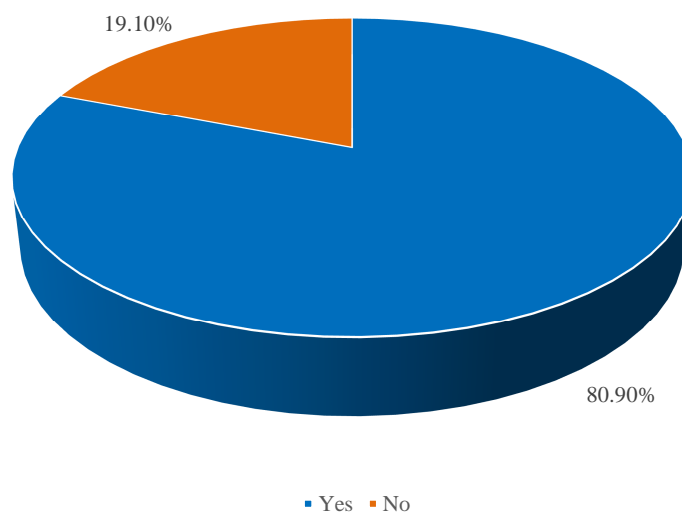


In this study, amid those who had donated, majority, 87.90% answered that they felt happy with the safety measures taken by the medical attendant during the procedure and 12.10% answered that they did not feel happy with the safety measures taken by the medical attendant during the procedure.

Table 64: Distribution of participants according to their practice of whether if they had donated blood in the past, did the medical attendants treated them well post blood donation

Did the medical attendants treat you well post blood donation	Distribution (n=173)	
	Number	Percentage
Yes	140	80.90
No	33	19.10
Total	173	100.00

Graph 64: Distribution of participants according to their practice of if they had donated blood in the past, did the medical attendants treated them well post blood donation

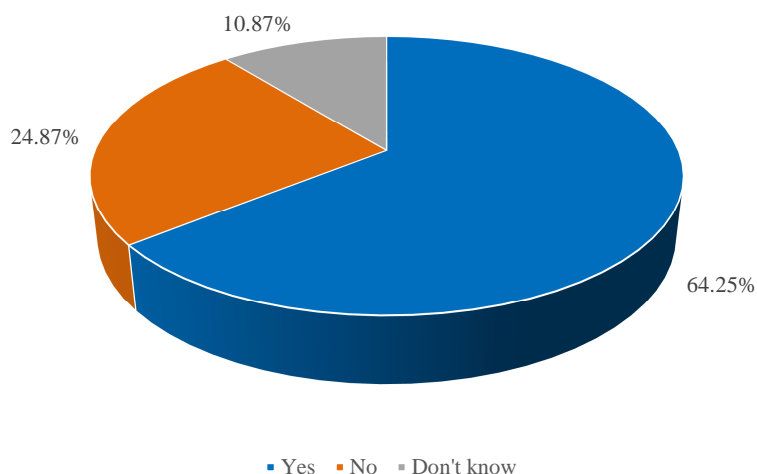


In this study, amid those who had donated, majority, 80.90% stated that the medical attendants treated them well post blood donation and 19.10% stated that the medical attendants did not treat them well post blood donation.

Table 65: Distribution of participants according to their practice of would they be interested to donate blood if an opportunity will be given to them

Would you be interested for donating blood if an opportunity will be given to you	Distribution (n=800)	
	Number	Percentage
Yes	514	64.25
No	199	24.87
Don't know	87	10.87
Total	800	100.00

Graph 65: Distribution of participants according to their practice of would they be interested to donate blood if an opportunity will be given to them

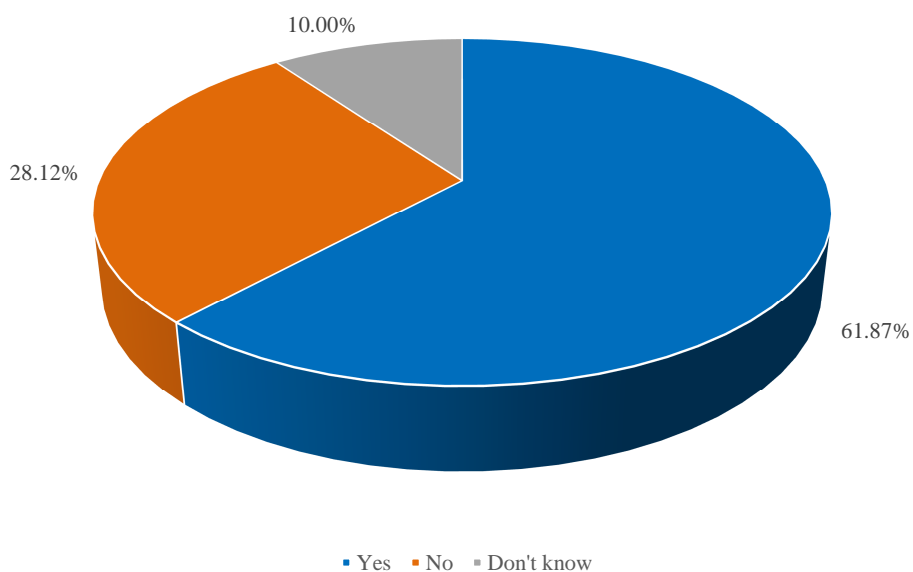


In this study, a greater portion of participants, 64.25% stated that they would be interested for donating if an opportunity will be given to them 24.87% stated that they would not be interested for donating if an opportunity will be given to them and 10.87% stated don't know.

Table 66: Distribution of participants according to their practice of would they like to donate blood regularly in the future

Would you be interested to donate blood regularly in the future	Distribution (n=800)	
	Number	Percentage
Yes	495	61.87
No	225	28.12
Don't know	80	10
Total	800	100.00

Graph 66: Distribution of participants according to their practice of would they like to donate blood regularly in the future

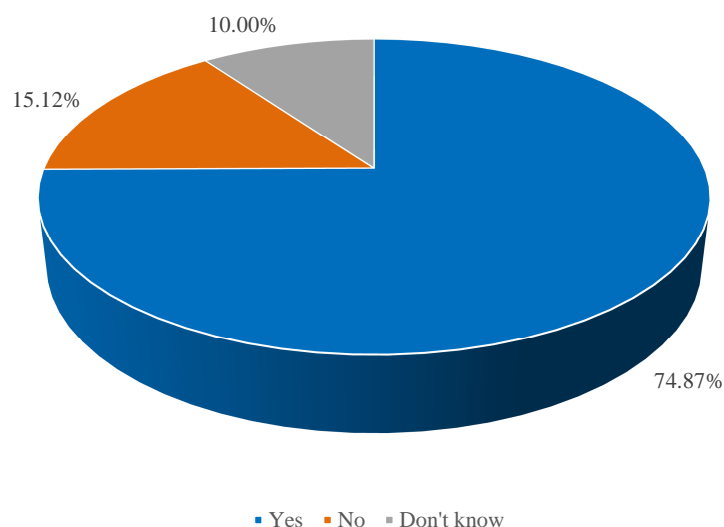


In this study, a larger portion of participants, 61.87% answered positively that they were interested to donate blood regularly, 28.12% answered that they were not interested to donate blood regularly and 10% answered don't know.

Table 67: Distribution of participants according to their practice of would they encourage their family, relatives and friends to donate blood

Would you encourage people known to you to donate blood	Distribution (n=800)	
	Number	Percentage
Yes	599	74.87
No	121	15.12
Don't know	80	10
Total	800	100.00

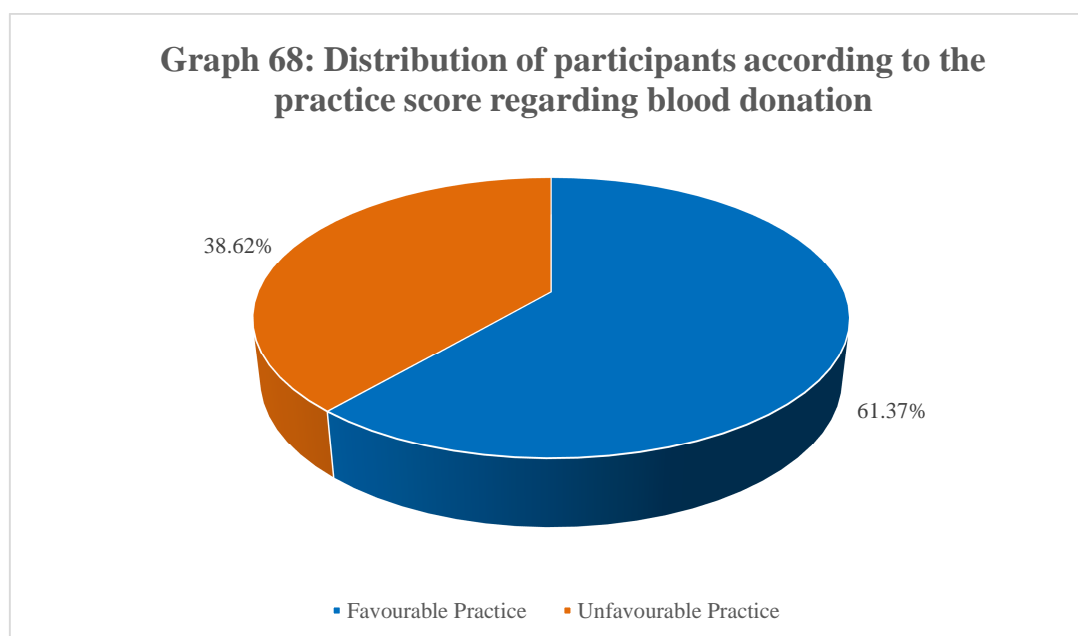
Graph 67: Distribution of participants according to their practice of would they encourage their family, relatives and friends to donate blood



In this study, a larger portion of participants, 74.87% answered positively that they were ready to motivate people known to them for donating blood, 15.12% answered that they were not ready to motivate people known to them for donating blood and 10% of the participants answered don't know.

Table 68: Distribution of participants according to the practice score

Practice Score	Number	Percentage
Favourable (≥ 3.06)	491	61.37
Unfavourable (< 3.06)	309	38.62
Total	800	100

Graph 68: Distribution of participants according to the practice score regarding blood donation

In this study, the mean practice score was 3.06, with standard deviation of 2.53. Amid the participants, 61.37% possessed favourable practice and 38.62% possessed unfavourable practice.

Association between sociodemographic variables and knowledge, attitude and practice regarding blood donation

Table 69: Association between sociodemographic variables and knowledge

	Knowledge Scores		
	Unstandardized Coefficients	Standardized Coefficients	Sig.
	B	Beta	
Sex			
Females	2.51 (1.49 - 3.53)	0.17	<0.001*
Males (Ref)			
Age			
≥ 21	1.83 (0.50 – 3.17)	0.12	0.01*
≤ 20 (Ref)			
Address			
Rural	-0.28 (-1.29 - 0.73)	-0.02	0.59
Urban			
Religion			
Others	0.93 (-0.54 - 2.41)	0.04	0.22
Hindu			
Number of family members			
≥ 5	-1.06 (-2.28 - 0.16)	-0.07	0.09
≤ 4			
Type of Family			
Nuclear	1.42 (-0.75 – 3.61)	0.09	0.20
Joint or Three Generation	1.81 (-0.56 – 4.18)	0.11	0.14

Broken and others (Ref)			
SES			
Class I	0.65 (-1.04 - 2.33)	0.04	0.45
Class II	-0.11 (-1.93 – 1.71)	-0.01	0.91
Class III	0.75 (-1.24 – 2.74)	0.03	0.46
Class IV or V (Ref)			
Branch			
Computer Science	3.57 (1.87 - 5.28)	0.21	<0.001*
Electronics And Communication	3.18 (1.27 – 5.08)	0.20	<0.001*
Mechanical	3.16 (1.01 - 5.30)	0.15	0.004*
Electrical, AI or Chemical	2.15 (0.09 -4.21)	0.10	0.041*
Civil (Ref)			
Blood Group			
O	5.19 (3.9 - 6.9)	0.32	<0.001***
A	3.51 (1.92 – 5.10)	0.19	<0.001***
B	4.37 (2.83 – 5.93)	0.25	<0.001***
AB	5.81 (3.69 - 7.94)	0.20	<0.001***
Don't know (Ref)			
Year of Study			
Year I	4.93 (3.17 – 6.70)	0.29	<0.001***
Year II	2.98 (1.36 – 4.60)	0.17	<0.001***
Year III	-0.15 (- 1.94 – 1.64)	-0.01	0.87
Year IV (Ref)			

Multiple Linear regression was utilized for assessing Knowledge scores towards blood donation. The findings were, females scored, on an average 2.51 units significantly higher on knowledge score as compared to males.

Individuals belonging to age ≥ 21 had 1.83 units significantly higher knowledge than those ≤ 20 .

Among academic disciplines, students from Computer science, Electronic and Communication, Mechanical and (Electrical or AI or Chemical) scored 3.57, 3.18, 3.16 and 2.15 respectively higher significant knowledge scores than Civil engineering students.

Participants with known blood groups (O, A, B, AB) had 5.19, 3.51, 4.37 and 5.81 respectively higher significant knowledge scores than those unaware of their blood group.

Additionally, students in the 1st and 2nd years demonstrated 4.93 and 2.98 respectively higher significant knowledge scores when compared with who were in the 4th year.

No other variables were significant.

Table 70: Association between sociodemographic variables and attitude

	Attitude Scores		
	Unstandardized Coefficients	Standardized Coefficients	Sig.
	B	Beta	
Sex			
Females	0.8 (0.17 – 1.42)	0.09	0.012*
Males (Ref)			
Age			
≥ 21	0.80 (-0.01 – 1.62)	0.09	0.053*
≤ 20 (Ref)			
Address			
Rural	-0.04 (-0.66 - 0.58)	-0.01	0.89
Urban			
Religion			
Others	0.02 (-0.88 – 0.91)	0.001	0.97
Hindu			
Number of family members			
≥ 5	0.07 (-0.74 - 0.75)	0.001	0.987
≤ 4			
Type of Family			
Nuclear	1.34 (0.01 - 2.67)	0.15	0.048*
Joint or Three Generation	1.19 (-0.26 – 2.63)	0.12	0.107
Broken and others (Ref)			
SES			
Class I	0.59 (-0.44 - 1.61)	0.07	0.26

Class II	0.39 (-0.72 – 1.49)	0.04	0.495
Class III	0.10 (- 1.11 – 1.31)	0.01	0.868
Class IV or V (Ref)			
Blood Group			
O	2.22 (1.31 – 3.14)	0.23	< 0.001***
A	1.44 (0.47 – 2.40)	0.13	0.004**
B	1.75 (0.80 – 2.69)	0.17	< 0.001***
AB	2.40 (1.1 - 3.70)	0.14	< 0.001***
Don't know (Ref)			
Year of Study			
1st Year	2.54 (1.46 – 3.61)	0.26	< 0.001***
2 nd Year	1.46 (0.47 - 2.44)	0.14	0.004**
3 rd Year	0.13 (- 0.95 – 1.22)	0.01	0.80
4 th Year (Ref)			
Branch of Study			
Computer Science	1.28 (0.24 – 2.32)	0.13	0.016*
Electronics And Communication	1.97 (0.80 – 3.13)	0.21	0.001*
Mechanical	0.55 (-0.76 – 1.86)	0.04	0.41
Electrical, AI or Chemical	1.85 (0.59 -3.10)	0.15	0.04*
Civil (Ref)			

Multiple Linear regression was utilized for assessing attitude scores towards blood donation. The findings were, females scored, on an average 0.8 units significantly higher on attitude score as compared to males.

Individuals belonging to age ≥ 21 had 0.80 units significantly higher attitude score than those ≤ 20 .

Further analysis revealed, those from nuclear families scored 1.34 units significantly higher on attitude scores as compared to those from broken families.

Participants with known blood groups (O, A, B, AB) had 2.22, 1.44, 1.75 and 2.40 respectively higher significant attitude scores than those unaware of their blood group.

Additionally, students in the 1st and 2nd years demonstrated 2.54 and 1.46 respectively higher significant attitude scores when compared with who were in the 4th year.

Among academic disciplines, students from Computer science, Electronic and Communication, (Electrical or AI or Chemical) scored 1.28, 1.97 and 1.85 respectively higher significant attitude scores than Civil engineering students.

No other variables were significant.

Table 71: Association between sociodemographic variables and practice

	Practice Scores		
	Unstandardized Coefficients	Standardized Coefficients	Sig.
	B	Beta	
Sex			
Females	-0.24 (-0.61 – 0.13)	-0.05	0.20
Males (Ref)			
Age			
≥ 21	0.12 (-0.36 – 0.61)	0.02	0.62
≤ 20 (Ref)			
Address			
Rural	0.04 (-0.33 - 0.40)	0.01	0.84
Urban			
Religion			
Others	0.10 (-0.44 – 0.64)	0.01	0.72
Hindu			
Number of family members			
≥ 5	0.02 (-0.42 - 0.45)	0.00	0.94
≤ 4			
Type of Family			
Nuclear	0.70 (-0.09 – 1.48)	0.13	0.08
Joint or Three Generation	1.06 (0.20 – 1.91)	0.19	0.02*
Broken and others (Ref)			
SES			
Class I	-0.04 (-0.63 – 0.55)	-0.01	0.89

Class II	0.20 (-0.43 – 0.84)	0.04	0.53
Class III	0.18 (-0.54 – 0.90)	0.02	0.63
Class IV or V (Ref)			
Branch			
Computer Science	0.56 (-0.06 – 1.18)	0.10	0.08
Electronics And Communication	0.54 (-0.16 – 1.23)	0.10	0.13
Mechanical	1.07 (0.29 – 1.86)	0.15	0.01*
Electrical, AI or Chemical	1.23 (0.48 -1.99)	0.18	0.001**
Civil (Ref)			
Blood Group			
O	0.79 (0.24 – 1.33)	0.14	0.01*
A	0.55 (-0.03 – 1.13)	0.09	0.06
B	0.60 (0.03 – 1.16)	0.10	0.04*
AB	0.69 (-0.09 – 1.47)	0.07	0.08
Don't know (Ref)			
Year of Study			
Year I	0.76 (0.12 – 1.41)	0.13	0.02*
Year II	0.53 (-0.07 – 1.12)	0.09	0.08
Year III	0.76 (0.11 – 1.41)	0.12	0.02*
Year IV (Ref)			

Multiple Linear regression was utilized for assessing practice scores towards blood donation. The findings were, individuals from Joint or Three Generation families scored 1.06 units significantly higher on practice scores as compared to those from broken families.

Among academic disciplines, students from Mechanical, (Electrical or AI or Chemical) scored 1.07 and 1.23 respectively higher significant practice scores than Civil engineering students.

Participants with known blood groups (O, B) had 0.79 and 0.60 respectively higher significant practice scores than those unaware of their blood group.

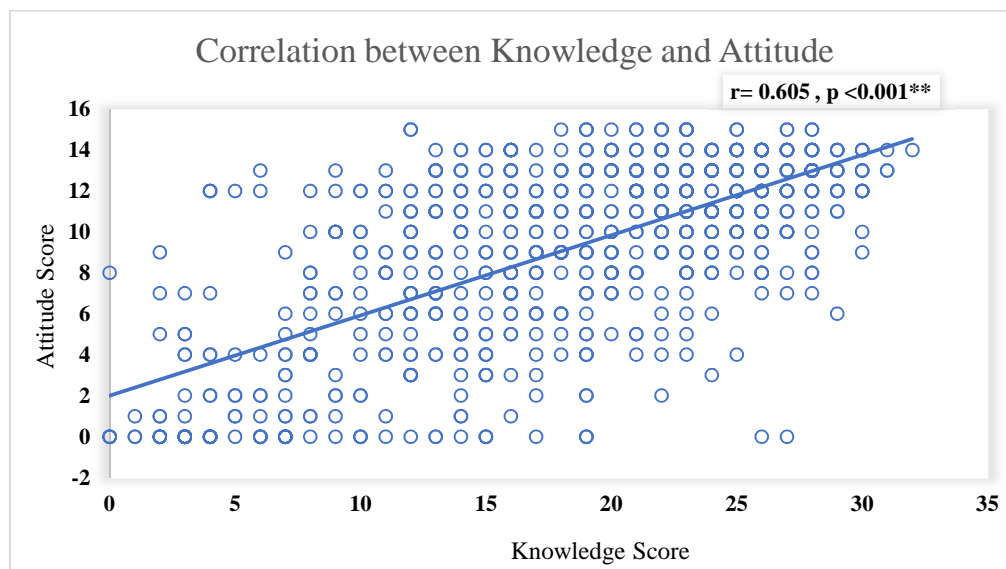
Additionally, students in the 1st year and 3rd year demonstrated 0.76 and 0.76 respectively significantly higher practice scores when compared with who were in the 4th year.

No other variables were significant.

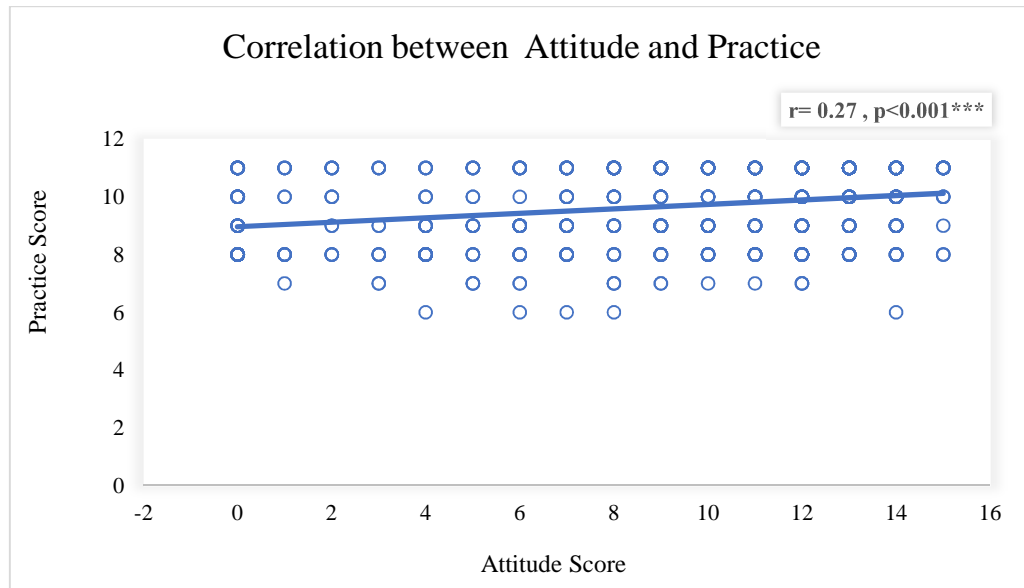
Table 72: Correlation between Knowledge, Attitude and Practice

	Spearman's Correlation		
	Knowledge	Attitude	Practice
Knowledge	1		
Attitude	0.605*	1	
p-value	<0.001***		
Practice	0.24*	0.27*	1
p-value	<0.001***	<0.001***	

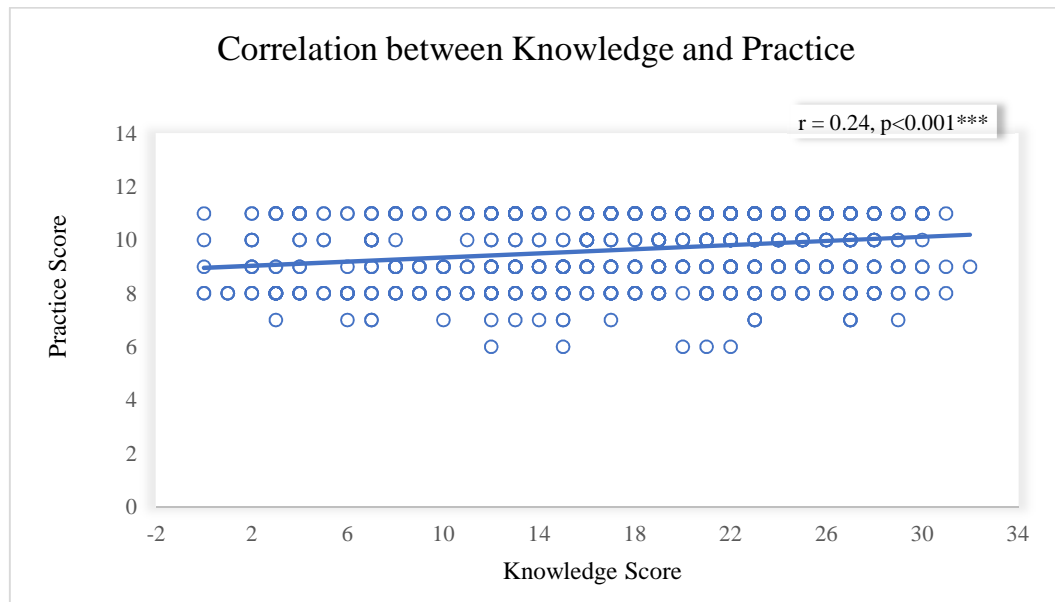
The correlation between knowledge and attitude was found to be 0.605, indicating a moderate positive relationship. In comparison, the correlation between knowledge and practice was 0.24 and between practice and attitude was 0.27, both suggesting weak positive relationship.

Graph 69: Correlation between Knowledge and Attitude

The correlation between knowledge and attitude was found to be 0.605, indicating a moderate positive relationship.

Graph 70: Correlation between Attitude and Practice

The correlation between attitude and practice was 0.27, indicating a weak positive relationship.

Graph 71: Correlation between Knowledge and Practice

The correlation between knowledge and practice was 0.24, suggesting weak positive relationship.

DISCUSSION

Table 1: Distribution of participants according to college

In this study, a larger portion of participants, 40.25% were from KLE Dr. M S Sheshgiri College, 28.25% of the participants were from Jain College, 25.12% of the participants were from S G Balekundri Institute of Technology, 6.37% of the participants were from Maratha Mandal Engineering College.

A similar study conducted by Bosco R J et. al, in which all the students were from TRP Engineering college, Irungalur, Trichy District, Tamil Nadu. ²

Another study conducted by Yeravdekar R et. al, revealed that amid the participants, 32.6% belonged to management faculty, 19.7% belonged to Health and Biological Sciences faculty, 13% belonged to law faculty, 11.5% belonged to Media, Communication and Design faculty, 9% belonged to engineering faculty, 7.6% belonged to information technology faculty and 6.5% belonged to other faculty³

Table 2: Distribution of participants according to age

In this study, a larger part of participants, 26% were aged 20 years, 24.50% aged 21 years, 23.37% aged 19 years, 10.65% 18 years, 10% aged 22 years, 4% aged 23 years, 1% aged 24 years, 0.50% aged 25 years. The mean age was 20.19±1.41

A study done by Bharadwaj L et.al in Bengaluru, revealed that the mean age was 20 years, with the age range from 19-21 years. ¹

A study done by Pathuri NK et.al in Hyderabad, revealed that the age of the students ranged from 18-21 years. ⁶

Table 3: Distribution of participants according to sex

In this study, larger part of participants, 55.87% were males and 44.12% were females.

A similar study done by Bosco R J et.al in Trichy District, Tamil Nadu, revealed that 78.8% were males, 21.2% were females. ²

A study done by Yeravdekar R, revealed that amid the participants, 48% were males and 52% were females, in which females were more than the males. ³

Another study conducted by Devi M K et. al, in Coimbatore, Tamil Nadu, revealed that amid the participants, majority, 82% were males. ⁷

Table 4: Distribution of participants according to place of residence

In this study, a greater portion of participants, 60.75% were from urban residence and 39.25% were from rural residence.

A similar study conducted by Raghuwanshi B et.al in Bhubaneshwar city, revealed that amid the participants, 57.4% were from urban residence and 38.9% were from rural residence. ⁸

Table 5: Distribution of participants according to branch of study

In this study, amid the participants, 33.50% were from Electronics and Communication branch, 25% studied in Computer Science branch, 13.75% studied in Mechanical branch, 12.25% studied in Civil branch, 7.87% studied in AI Robotic branch, 4.50% studied in Chemical branch and 3.12% studied in Electrical branch.

A study done by Parash M T H et. al, showed that, amid the students, 14% studied in Computer Science branch, 14% studied in Electrical branch, 8% studied in Mechanical branch, 8% studied in Chemical branch and 4% studied in Civil branch.²⁴

Table 6: Distribution of participants according to year of study

In this study, majority of the students, 27% studied in the 1st year, 26% of the students studied in the 4th year, 25.12% of the students studied in the 2nd year and 21.87% of the students studied in the 3rd year

A study conducted by Gebresilase H W et. al, showed that amid the participants, 50% were from third year and 27.8% were from fourth year.¹²

Table 7: Distribution of participants according to religion

In this study, a larger part of participants,, 87.62% belonged to Hindu religion, 5.87% belonged to Jain religion, 5.75% belonged to Muslim religion, 0.75% belonged to Christian religion.

A study conducted by Gebresilase H W et. al, showed that 16.1% of the participants belonged to muslim religion, 65% of the participants belonged to orthodox religion, 34% of the participants belonged to protestants religion among the non-health science students.¹²

Table 8: Distribution of participants according to type of family

In this study, majority of the participants, 64.87% belonged to nuclear family, 25.25% of the participants belonged to joint family, 4.12% of the participants belonged to three generation family, 3.37% of the participants belonged to broken family and 2.37% of the participants belonged to other family types.

A study conducted by Raghuwanshi B et.al, in Bhubaneswar city, India, revealed that more participants, 58.4% belonged to nuclear family and 35.6% of the participants belonged to joint family.⁸

Table 9: Distribution of participants according to socio-economic status

In this study, according to Modified B G Prasad classification, majority of the participants, 49.50% belonged to class I, 26.62% of the participants belonged to class II, 13% of the participants belonged to class III, 9.25% of the participants belonged to class IV and 1.62% of the participants belonged to class V.

A study conducted by Salem M et. al, revealed that amid the participants, 12.7% responded as having excellent economic status (sufficient for meeting basic living expenses in addition to indulgence in extra luxuries), 61.7% responded as having good economic status (covering basic needs of living in addition to specific additional costs), 21.7% of the participants lived at an accepted economic level (sufficient for basic needs of living only) and 3.9% expressed bad economic status (insufficient for basic needs of living).²⁵

Table 10: Distribution of participants according to knowledge of their blood group

In this study, majority, 83.12% knew their blood group, 16.87% responded as not knowing blood group.

A study conducted by Bharadwaj L et.al, revealed that majority of the participants, 76.8% knew their blood group, 2.2% responded as not knowing blood group.¹

These findings from our study and the study by Bharadwaj L et.al, reveal that majority of the students across various colleges were knowing their blood group.

Table 11: Distribution of participants according to their blood group

In this study, among those participants who knew their blood group, majority, 32.68% belonged to O Positive blood group, 24.81% belonged to A Positive blood group, 28.97% belonged to B Positive blood group, 7.57% belonged to AB Positive blood group, 2.08% belonged to O Negative blood group, 1.04% belonged to A Negative blood group, 1.48% belonged to B Negative blood group and 1.33% belonged to AB Negative blood group.

A study done by Islam K N et. al, revealed that, 27.92% O Positive blood group, 27.66% had A Positive blood group, 26.90% belonged to B Positive blood group, 9.90% belonged to AB Positive blood group, 2.28% belonged to O Negative blood group, 1.02% belonged to A Negative blood group, 2.28% belonged to B Negative blood group and 0% belonged to AB Negative blood group.¹⁸

These findings from this study and the study conducted by Islam K N et. al, shows that the most common blood groups in the college students population are O Positive, A Positive and B Positive.

Table 12: Distribution of participants according to their knowledge of minimum age required to donate blood

In this study, a larger part of participants, 76.25% answered correctly as 18 years as the minimum age required to donate blood, 11.62% responded 20 years as the minimum age required to donate blood, 9.75% responded don't know, 2.12%

responded 25 years as the minimum age required to donate blood and 0.25% responded 28 years as the minimum age required for donating blood.

A study conducted by Yeravdekar R et. al, showed that, a larger part of participants, 77% responded 18 years as the minimum age required to donate blood, 12.5% responded 16 years as the minimum age required to donate blood, 5.4% responded don't know, 2.8% responded 21 years as the minimum age required to donate blood and 2.2% responded that there is no minimum age required to donate blood.³

These similar findings between our study and the study conducted by Yeravdekar R et. al, reveal that, most of the college students are well aware of the minimum age required for blood donation.

Table 13: Distribution of participants according to their knowledge of the minimum weight of a person required for blood donation

In this study, amid the participants, majority, 46.37% answered correctly as >50 kgs as the minimum weight of a person required for blood donation, 27.12% stated >40 kgs as the minimum weight of a person required for blood donation, 16.37% stated don't know, 8% stated >30 kgs as the minimum weight of a person required for blood donation and 2.12% stated <30 kgs as the minimum weight of a person required for blood donation.

Study conducted by Yeravdekar R et. al, showed that, amid the participants 32.4% answered 50 kg as the minimum weight of a person required for blood donation, 35.7% stated depends on height, 17% stated 45 kg as the minimum weight of a person required for blood donation, 11.8% stated don't know and 3.2% stated 40 kg as the minimum weight of a person required for blood donation.³

Table 14: Distribution of participants according to their knowledge of the minimum hemoglobin (Hb) required for blood donation

In this study, a larger part of participants, 60% answered correctly as 12-13mg/dl as the minimum hemoglobin required for blood donation, 24.25% stated don't know, 7.17% stated 10 mg/dl as the minimum hemoglobin required for blood donation, 6.25% stated 11 mg/dl as the minimum hemoglobin required for blood donation and 2.12% stated 8 mg/dl as the minimum hemoglobin required for blood donation.

A similar study conducted by Yeravdekar R et. al, revealed that, amid the participants 46.7% answered ≥ 12 g/dl as the minimum hemoglobin required for blood donation, 24.7% mentioned 11g/dl to 12.5 g/dl as the minimum hemoglobin required for blood donation, 4.4% mentioned upto 10 g/dl as the minimum hemoglobin required for blood donation, 23.8% mentioned don't know and 0.4% mentioned no minimum limit.³

Table 15: Distribution of participants according to their knowledge of how frequently can a healthy person donate blood

In this study, 14.87% of the participants answered correctly that a healthy person can donate blood 4 times in a year, 39.50% stated that a healthy person can donate blood twice in a year, 18.62% stated don't know, 20.75% stated that a healthy person can donate blood 3 times in a year, and 6.25% stated that a healthy person can donate blood once in a year.

In contrast a study conducted by Bosco R J et.al, in Trichy District, Tamil Nadu, revealed that 56.3% of the participants answered that a healthy person can donate blood once in 3 months (4 times in a year).²

Another study done by Mussema A et. al, showed that, amid the participants 57.5% stated that a donor can donate blood once in 3 months (4 times in a year) and 42.5% stated other (once a week, month, 6 months) as the interval to donate blood.²⁰

The different finding in knowledge of how frequently can a healthy person donate blood between this study and study conducted by Bosco R J et. al and Mussema A et. al, could be due to regional variations, which shows that regional variations could have an impact on the knowledge about blood donation.

Table 16: Distribution of participants according to their knowledge of volume of blood collected during each regular blood donation

In this study, amid the participants, 29.62% answered correctly as 350-450 ml as the amount of blood drawn during each regular blood donation, 19.50% stated 100 ml as the amount of blood drawn during each regular blood donation, 27% stated don't know, 16.75% stated 200 ml as the amount of blood drawn during each regular blood donation and 7.12% stated 500 ml as the amount of blood drawn during each regular blood donation.

A study conducted by Yeravdekar R et. al, revealed that, amid the participants, 37% stated 350-450 ml as the amount of blood drawn from a donor during blood donation, 30.2% stated 150-250 ml as the amount of blood drawn from a donor during blood donation, 17% stated don't know and 15.8% stated 250-350 ml as the amount of blood drawn from a donor during blood donation.³

Another study done by Mussema A et. al, showed that 65.4% of the participants answered < 500ml as amount of blood given by a donor during a donation and 34.6% of the participants answered > 500ml as the amount of blood given by a donor during a donation.²⁰

Table 17: Distribution of participants according to their knowledge of for how many days can the donated blood be stored at optimal temperature

In this study, amid the participants, 27.75% stated correctly that the donated blood can be stored at optimal temperature for >25 days, 47.37% stated as don't know, 8.87% stated that the donated blood can be stored at optimal temperature for 20 days, 8.50% stated that the donated blood can be stored at optimal temperature for 15 days and 7.50% stated that the donated blood be stored at optimal temperature for 10 days.

A study conducted by Mishra S K et. al, revealed that, 40.40% of the donors answered correctly regarding the number of days the blood collected can be stored safely and 24% of the non-donors answered correctly regarding the number of days the blood collected can be stored safely.¹⁴

A study done by Anwer M O et. al, revealed that, 46.4% of the participants from the medical field answered that they knew how long the blood can be stored safely and 16.2% of the participants from the non-medical field answered that they knew how long the blood can be stored safely.¹⁹

A similar study conducted by Pathuri N K et. al, revealed that 35.58% of the participants answered correctly regarding storage duration of whole blood when stored at 2-6 degree Celsius (35 days).⁶

Table 18: Distribution of participants according to their knowledge of how many lives can be saved from each unit of donated blood

In this study, amid the participants, 23.75% stated correctly that three lives can be saved from each unit of donated blood, majority of the participants, 31% stated that

one life can be saved from each unit of donated blood, 29.25% stated don't know, 12.62% stated that two lives can be saved from each unit of donated blood and 3.37% stated that four lives can be saved from each unit of donated blood.

A study done by Yeravdekar R et. al, revealed that, amid the participants, 20.6% stated that three lives can be benefitted from one unit of whole blood, 19.6% stated that more than three lives can be benefitted from one unit of whole blood, 16.9% stated that one life can be benefitted from one unit of whole blood, 14% stated that two lives can be benefitted from one unit of whole blood and 28.8% stated don't know.³

Table 19: Distribution of participants according to their knowledge of whether the donated blood is screened for transmissible infections like HIV, Hepatitis and Malaria

In this study, a larger portion of participants, 53.75% answered correctly as the donated blood is screened for transmissible infections like HIV, Hepatitis and Malaria, 30.12% mentioned as don't know and 16.12% mentioned as the donated blood is not screened for transmissible infections like HIV, Hepatitis and Malaria.

A similar study conducted by Bharadwaj L et.al, revealed that 83.2% of the medical students answered the collected blood is tested for HIV, Hepatitis and Syphilis, 16.8% of the medical students answered the collected blood is not tested for HIV, Hepatitis and Syphilis. Among the non-medical students, 88.8% answered the collected blood is tested for HIV, Hepatitis and Syphilis and 11.2% answered as the collected blood is not tested for HIV, Hepatitis and Syphilis.¹

A similar study conducted by Ibrahim A A et.al, revealed that a larger portion of participants, 82.4% answered as the donated blood will be screened before

transfusing it to other people, 15.3% mentioned as don't know and 2.3% mentioned as the donated blood will not be screened before transfusing it to other people.²⁶

These similar findings between the study done by us and the studies conducted by Bharadwaj L et. al and Ibrahim A A et. al, reveal that, most of the college students possess adequate understanding regarding the screening of donated blood.

Table 20: Distribution of participants according to their knowledge of a person with which blood group is considered as the universal donor

In this study, a larger portion of participants, 60.12% answered correctly that person belonging to O +ve blood group is the universal blood giver, 24.62% stated person belonging to O -ve blood group is the universal blood giver, 20.75% stated person belonging to AB +ve blood group is the universal blood giver, 9.62% don't know and 0.87% stated person belonging to B +ve blood group is the universal blood giver.

A study done by Yeravdekar R et. al, revealed that, amid the participants, majority, 72.4% stated person belonging to O +ve blood group is the universal blood giver, 21.3% stated person belonging to O -ve blood group is the universal blood giver, 2.8% stated person belonging to AB +ve blood group is the universal blood giver, 0.5% stated person belonging to AB -ve blood group is the universal blood giver and 3% stated don't know.³

These similar findings between our study and the study done by Yeravdekar R et. al, reveal that, most of the students are well aware of a person with which blood group is considered as the universal donor.

Table 21: Distribution of participants according to their knowledge of a person with which blood group is considered as the universal recipient

In this study, a greater portion of participants, 49.12% stated correctly person belonging to AB +ve blood group is the universal blood receiver, 20.50% stated don't know, 13% stated person belonging to O+ve blood group is the universal blood receiver, 10% stated person belonging to O -ve is the universal blood receiver and 7.50% stated person belonging to AB -ve blood group is the universal blood receiver.

A study conducted by Yeravdekar R et. al, showed that, amid the participants, majority, 67.3% stated person belonging to AB +ve blood group is the universal blood receiver, 8.5% stated person belonging to AB -ve blood group is the universal blood receiver, 7.7% stated person belonging to O+ve blood group is the universal blood receiver, 6.3% stated person belonging to O -ve is the universal blood receiver and 10.2% stated don't know.³

These similar findings between our study and the study done by Yeravdekar R et. al, reveal that, most of the students are well aware of a person with which blood group is considered as the universal recipient.

Table 22: Distribution of participants according to their knowledge of the components of blood prepared in a blood bank

In this study, a greater portion of participants, 62.25% answered correctly that all of the above (Red blood cells, Platelets, Plasma) as the components of blood prepared in a blood bank, 20.12% mentioned don't know, 10% mentioned red blood cells as the components of blood prepared in a blood bank, 4.25% mentioned plasma as the components of blood prepared in a blood bank and 3.37% mentioned platelets as the components of blood prepared in a blood bank.

A similar study conducted by Pathuri N K et.al, revealed that, amid the participants, 39.94% mentioned correctly regarding the components that can be prepared from a “Triple Bag” (Packed Cells, Fresh Frozen Plasma, Platelets).⁶

A similar study conducted by Mishra S K et. al, in North India revealed that 70.80% of the blood donor participants answered correctly about the components that can be prepared from blood and 54.40% of the non donor participants answered correctly about the components that can be prepared from blood.¹⁴

Table 23: Distribution of participants according to their knowledge of whether diseases can be transmitted during blood donation

In this study, amid the participants, majority, 69.12% answered correctly that diseases can be transmitted during blood donation, 16% stated that diseases cannot be transmitted during blood donation and 14.87% stated as don't know.

A similar study conducted by Yeravdekar R et. al, revealed that, amid the participants, majority, 83.3% answered that diseases can be transmitted during blood donation, 6.2% stated that diseases cannot be transmitted during blood donation and 10.5% stated as don't know.³

Contrarily, a study conducted by Devi M K et. al, in Coimbatore, Tamil Nadu, revealed that 26.02% of the male participants knew about the infectious diseases through transmission and 28.57% of the female participants about the infectious diseases through transmission.⁷

Table 24: Distribution of participants according to their knowledge of the duration for the replenishment of the lost volume of blood

In this study, amid the participants, 26.12% mentioned correctly as 24 hours as the duration for the replenishment of the lost volume of blood, 45.25% mentioned don't know, 13% mentioned 15 days as the duration for the replenishment of the lost volume of blood, 12.25% mentioned 2 days as the duration for the replenishment of the lost volume of blood and 3.75% mentioned 4 days as the duration for the replenishment of the lost volume of blood.

A similar study done by Ibrahim A A et.al, showed that, amid the participants, 45.8% responded 24-48 hours as the duration for the replenishment of the lost volume of blood, 10% responded that 24-48 hours is not the duration for the replenishment of the lost volume of blood and 44.3% responded don't know.²⁶

These findings show that there is a difference in the knowledge of the duration for the replenishment of the lost volume of blood between our study and the study conducted by Ibrahim A A et. al, which could be due to regional differences in the understanding of blood donation.

Table 25: Distribution of participants according to their knowledge of for how many hours before blood donation should a person avoid alcohol intake

In this study, amid the participants, majority, 58.12% mentioned correctly as 24-48 hours as the duration before blood donation a person should avoid alcohol intake, 24% mentioned don't know, 9.5% mentioned 6 hours as the duration before blood donation a person should avoid alcohol intake, 4.37% mentioned 15 hours as the duration before blood donation a person should avoid alcohol intake and 4%

mentioned 2 hours as the duration before blood donation a person should avoid alcohol intake.

A study conducted by Bosco R J et.al, revealed that, amid the participants, 12.8% stated that an alcoholic can donate blood.²

A similar study conducted by Devi M K et.al, in Coimbatore, South India, revealed that 4.88% of the male participants had awareness of whether an alcoholic can donate blood or not and 7.14% of the female participants had awareness of whether an alcoholic can donate blood or not.⁷

Table 26: Distribution of participants according to their knowledge of the place to donate blood

In this study, amid the participants, majority, 77.75% answered correctly as blood bank and blood donation campaigns as the place to donate blood, 16.25% stated don't know, 2.25% stated OPD as the place to donate blood, 2.25% stated wards as the place to donate blood and 1.50% ICU as the place to donate blood.

A similar study Bosco R J et. al, in Trichy District, Tamil Nadu, showed that, amid the participants, 84% mentioned that the recommended type of donation is voluntary.²

Another study done by Swetha T et. al, in Chennai, Tamil Nadu, showed that, amid the participants, 60.4% mentioned that blood bank is a safe source for blood, 28 mentioned that blood bank is not a safe source for blood and 11.6% mentioned not sure that blood bank is a safe source for blood.²⁷

Table 27: Distribution of participants according to their knowledge of whether a menstruating girl can donate blood

In this study, amid the participants, 38.87% answered correctly that a menstruating girl cannot donate blood, 33.87% responded don't know and 27.25% responded that a menstruating girl can donate blood.

A similar study done by Ibrahim A A et. al, showed that amid the participants, 59.5% answered that a menstruating female cannot donate blood, 31.6% stated don't know and 8.9% stated that a menstruating female can donate blood.²⁶

Table 28: Distribution of participants according to their knowledge of whether a person can donate blood after vaccination

In this study, a greater portion of participants, 46% answered correctly that a person cannot donate blood after vaccination, 30.62% mentioned don't know and 23.37% mentioned that a person can donate blood after vaccination.

A similar study conducted by Devi M K et. al, in Coimbatore, Tamil Nadu, revealed that, amid the participants, 11.38% of the male participants knew about the basic criteria for donation and 4.76% of the female participants knew about the basic criteria for donation.⁷

Table 29: Distribution of participants according to their knowledge of which patients require blood regularly

In this study, amid the participants, 45% answered correctly that all of the above patients (Cancer, Bone marrow failure, Thalassemia) require blood regularly, 26.87% mentioned don't know, 11.25% mentioned bone marrow failure patients

require blood regularly, 9.12% mentioned thalassemia patients require blood regularly and 7.75% mentioned cancer patients require blood regularly.

A similar conducted by Mishra S K et. al, in North India, revealed that, amid the participants, 44.40% of the blood donor participants answered correctly regarding the conditions in which blood is needed and 25.90% of the non-donor participants answered correctly regarding the conditions in which blood is needed.¹⁴

Table 30: Distribution of participants according to their knowledge of whether it is mandatory to obtain consent before blood donation

In this study, amid the participants, majority, 63% answered correctly that it is mandatory to obtain consent prior to donation, 29% responded don't know and 8% responded that it is not mandatory to obtain consent prior to donation.

A similar study conducted by Yeravdekar R et. al, revealed that, amid the participants, majority, 86.8% answered that it is mandatory to obtain consent prior to donation, 6.1% stated that it is not mandatory to obtain consent prior to donation and 7.2% stated don't know.³

These similar findings between study done by us and the study conducted by Yeravdekar R et. al, reveal that, majority of the college students are well aware that it is mandatory to obtain consent prior to donation.

Table 31: Distribution of participants according to their knowledge of whether a person can donate blood on an empty stomach

In this study, amongst the participants, majority, 61.12% answered correctly that a person cannot give blood without eating, 20.25% stated don't know and 18.62% stated that a person can give blood without eating.

A similar study conducted by Bharadwaj L et. al, revealed that, 100% of the medical students answered that a person cannot give blood without eating. 70.4% of the non-medical students answered that a person can give blood without eating and 29.6% of the non-medical students answered that a person cannot give blood without eating.¹

Another study done by Ibrahim A A et.al, revealed, amongst the participants, 49.4% mentioned that a person cannot give blood without eating, 33.3% mentioned don't know and 17.4% mentioned that a person can give blood without eating.²⁶

Table 32: Distribution of participants according to their knowledge of contraindications of blood donation

In this study, a greater part of participants, 44.12% stated correctly as all of the above (Sore throat, If a person recently had tattoo or body piercing within 6 months, Common cold, Fever on the day of blood donation), 41.50% stated don't know, 7.75% stated sore throat, 4.62% stated if a person recently had tattoo or body piercing within 6 months, 4.37% stated fever on the day of blood donation and 2.75% stated common cold.

A similar study conducted by Batiha A M et.al, revealed that 44.4% of the male participants knew about persons ineligible to donate blood, 43.1% of the female participants knew about persons ineligible to donate blood. 46.9% of the male participants had awareness whether a person who had tattooing/ear piercing within 6 months could donate blood or not and 42.7% of the female participants had awareness whether a person who had tattooing/ear piercing within 6 months could donate blood or not.²⁸

A similar another study conducted by Devi M K et. al, revealed that 10.57% of the male participants knew about criteria for unfit donor and 4.76% of the female participants knew about criteria for unfit donor.⁷

Another study conducted by Ibrahim A A et.al, showed that, amongst the participants, 64.8% mentioned that a person with fever cannot donate blood, 28.8% mentioned don't know and 6.4% mentioned that a person with fever can donate blood.(26)

Table 33: Distribution of participants according to their knowledge of whether a person who has been treated for Rabies/ Hepatitis B in the past one year can donate blood

In this study, a greater part of participants, 55.50% answered correctly that a person who has been treated for Rabies/ Hepatitis B in the past one year cannot donate blood, 36% stated don't know and 8.50% stated that a person who has been treated for Rabies/ Hepatitis B in the past one year can donate blood.

A similar study conducted by Devi M K et. al, in Coimbatore, Tamil Nadu, revealed that 11.38% of the male participants knew about the basic criteria for donation and 4.76% of the female participants knew about the basic criteria for donation.⁷

A study conducted by Chauhan R et. al, in North India, revealed that, amongst the participants, 51% stated correctly whether a person treated for rabies/hepatitis B in the past one year can donate blood or not.¹⁰

Table 34: Distribution of participants according to their knowledge of whether a person treated for malaria in the past 3 months can donate blood

In this study, amongst the participants, majority, 52.87% answered correctly that a person treated for malaria within the last 3 months cannot donate blood, 36.62% mentioned don't know and 10.50% mentioned that a person treated for malaria within the last 3 months can donate blood.

A similar study conducted by Devi M K et. al, in Coimbatore, Tamil Nadu, revealed that 11.38% of the male participants knew about the basic criteria for donation and 4.76% of the female participants knew about the basic criteria for donation.⁷

A study conducted by Chauhan R et. al, in North India, revealed that 51% of the participants answered correctly whether a person treated for malaria within the last 3 months for can donate blood or not.¹⁰

Table 35: Distribution of participants according to their knowledge of whether a pregnant/lactating women can donate blood

In this study, amongst the participants, majority, 65.25% answered correctly that a pregnant/lactating women cannot donate blood, 28.87% stated don't know and 5.87% stated that a pregnant/lactating women can donate blood.

A similar study done by Ibrahim A A et.al, revealed that, amongst the participants, majority, 74.2% answered that a pregnant woman cannot donate blood, 23.3% responded don't know and 2.5% responded that a pregnant woman can donate blood. 55.9 responded that a lactating woman cannot donate blood, 33.9% responded don't know and 10.2% responded that a lactating woman can donate blood.²⁶

These similar findings between the study done by us and the study conducted by Ibrahim A A et.al, reveal that, most of the students are well aware that a pregnant/lactating woman cannot donate blood.

Table 36: Distribution of participants according to their knowledge of whether a hypertensive and diabetic patient can donate blood

In this study, a larger portion of participants, 61% answered correctly that a hypertensive and diabetic patient cannot donate blood, 27% stated don't know and 12% stated that a hypertensive and diabetic patient can donate blood.

A similar study conducted by Ibrahim A A et. al, revealed that a greater portion of participants, 65.5% answered correctly that a diabetic and hypertensive person cannot donate blood, 24.6% mentioned don't know and 10% mentioned that a diabetic and hypertensive person can donate blood.²⁶

These similar findings between the study done by us and the study conducted by Ibrahim A A et.al, reveal that, most of the students are well aware that a hypertensive and diabetic patient cannot donate blood.

Table 37: Distribution of participants according to their knowledge of whether a person with heart disease can donate blood

In this study, a greater portion of participants, 57.25% answered correctly that a person with heart disease cannot donate blood, 27.87% stated don't know and 14.87% stated that a person with heart disease can go for donating blood.

A study conducted by Chauhan R et. al, in North India, revealed that, amongst the participants, 66% mentioned correctly that a person free from diabetes and heart disease can go for donating blood.¹⁰

A similar study conducted by Devi M K et. al, in Coimbatore, Tamil Nadu, revealed that 11.38% of the male participants knew about the basic criteria for donation and 4.76% of the female participants knew about the basic criteria for donation.⁷

Table 38: Distribution of participants according to their knowledge of whether an average blood donation process last for 20 minutes

In this study, a greater portion of participants, 47.75% answered correctly that an average blood donation process last for 20 minutes, 37.12% stated don't know and 15.12% stated that an average blood donation process does not last for 20 minutes.

A similar study done by Ibrahim A A et.al, revealed that, amongst the participants, 47.7% answered correctly that the donation procedure last for 20 minutes, 35.4% stated don't know, 16.1% stated that the donation procedure lasts for 30 min to 1 hour and 0.8% stated that the donation procedure lasts for more than 1 hour.²⁶

These similar findings between study done by us and the study conducted by Ibrahim A A et.al, reveal that, most of the students have correct knowledge that an average blood donation process last for 20 minutes.

Table 39: Distribution of participants according to their knowledge of which is the best source for blood donation

In this study, amongst the 800 participants majority, 52% answered correctly that donation voluntarily is the optimal source for blood donation, 36.25% mentioned don't know, 6.62% mentioned replacement donation as the optimal source for blood

donation and 5.50% mentioned paid professional donation as the optimal source for blood donation.

A similar study conducted by Yeravdekar R et. al, revealed that a larger part of participants, 77% answered that donation voluntarily is the optimal source for blood donation, 8.6% stated paid professional donation as the optimal source for blood donation, 3.9% stated replacement donation as the optimal source for blood donation and 10.5% stated don't know.³

These findings between our study and the study conducted by Yeravdekar R et. al, reveal that, majority of the college students have the correct knowledge that donation by voluntary means is the optimal source for blood donation.

Table 40: Distribution of participants according to their knowledge of whether they know the benefits of donating blood

In this study, amongst the 800 participants majority, 62.37% answered that they know the advantages of giving blood, 22.87% stated don't know and 14.75% stated that they don't know the advantages of giving blood.

A similar study conducted by Devi M K et. al, in Coimbatore, Tamil Nadu, showed that, 5.69% of the male participants knew about the donor benefits from transfusion and 7.14% of the female participants knew about the donor benefits from transfusion.⁷

A similar study conducted by Batiha A M et.al, revealed that 70.3% of the males had awareness regarding the benefits derived from donating blood, 81.5% of the females had awareness regarding the benefits derived from donating blood.²⁸

Table 41: Distribution of participants according to the knowledge score

In the present study amid the participants, 12.5% possessed a good knowledge score, 71.9% possessed moderate knowledge score and 15.6% possessed poor knowledge score.

A similar study conducted by Rajeshwari S et. al, in Raichur, revealed that 14% of the engineering students possessed a good understanding of blood donation and 65% of the medical students possessed a good understanding of blood donation.¹⁵

The more knowledge among the medical students than the engineering students may be because of the specialized education in the medical field.

In contrast, a study done by Yeravdekar R et. al, revealed that, amongst the participants, 64.1% possessed above average knowledge and 35.9% possessed below average knowledge.³

The difference between study done by us and the study conducted by Yeravdekar R et. al, could be because, the study by Yeravdekar R et. al, had students from various fields and the specialized education in their field could have enhanced their knowledge.

A study conducted by Raghuwanshi B et. al, revealed that 57.1% of the participants were more knowledgeable and 42.9% of the participants were less knowledgeable.⁸

Another study conducted by Kote N et. al, revealed that among the engineering students, 2% of the students scored 100% in knowledge aspect, 14% of the students scored between 75 to 99.9% in knowledge aspect, 61% of the students scored between 50 to 74.9% in knowledge aspect, 22% of the students scored between

25 to 49.9% in knowledge aspect and 1% of the students scored <25% in knowledge aspect. Among the medical students, 15%, 29%, 48%, 8%, 0% scored 100%, between 75 to 99.9%, between 50 to 74.9%, between 25 to 49.9% and <25% respectively in knowledge aspect. Among the dental students 8%, 24%, 59%, 9%, 0% scored 100%, between 75 to 99.9%, between 50 to 74.9%, between 25 to 49.9% and <25% respectively in knowledge aspect.⁹

Table 42: Distribution of participants according to their attitude of can blood donation make a person weak

In this study, amid the participants, majority, 60.62% had an optimistic outlook that blood donation cannot make a person weak, 23.50% had a pessimistic outlook that blood donation can make a person weak and 15.87% mentioned don't know.

A similar study conducted by Rajeshwari S et.al, in Raichur, revealed that 10% of the engineering students had the belief that blood donation does cause weakness in the body and 5 % of the medical students had the belief that blood donation does not cause weakness in the body.¹⁵

These findings between our study and the study conducted by Rajeshwari S et.al, reveal that, most of the college students held an optimistic outlook that blood donation does not make a person weak.

Table 43: Distribution of participants according to their attitude of can blood donation lead to anaemia

In this study, majority of the engineering students, 56.37% expressed a positive attitude that blood donation does not lead to anaemia, 30.62% mentioned don't know and 13% expressed a negative attitude that blood donation leads to anaemia.

A study done by Swetha T et. al, in Chennai, revealed that, amid the participants 59.8% mentioned that blood donation does not lead to anaemia, 25% mentioned that blood donation leads to anaemia and 15.2% mentioned not sure.²⁷

These similar findings between our study and the study conducted by Swetha T et. al, reveal that, most of the students held an optimistic outlook that blood donation does not lead to anaemia.

Table 44: Distribution of participants according to their attitude of can blood donation lower immunity

In this study, a greater portion of participants, 59.87% responded that blood donation does not lower immunity, 24% stated don't know and 16.12% responded that blood donation lowers immunity.

A similar study conducted by Mussema A et. al, revealed that 35.1% of the participants answered that a donor can feel sick by donating blood.²⁰

A study conducted by Swetha T et. al, in Chennai, revealed that majority of the participants, 68.7% answered that blood donation does not lower immunity, 16.3% stated not sure and 15% stated that blood donation lowers immunity.²⁷

Table 45: Distribution of participants according to their attitude of whether blood should be donated only to family members, relatives and friends

In this study, a larger part of participants, 73.75% mentioned that blood should not be donated only to family members, relatives and friends, 17.25% mentioned don't know and 9% mentioned that blood should be donated only to family members, relatives and friends.

Contrastingly, a study done by Raghuwanshi B et. al, in Bhubaneswar city, revealed that 80% of the non-medical students answered that they are interested to donate blood to known people and 20% of the medical students answered that they are interested to donate blood to known people.⁸

Table 46: Distribution of participants according to their attitude of whether women should not donate blood

In this study, amongst the participants, majority, 70.75% had an optimistic outlook that women should donate blood, 19.50% mentioned don't know and 9.75% had a pessimistic outlook that women should not donate blood.

Contrastingly, a study done by Devi M K et. al, showed that, 24.80% of the male participants answered that there does not exist gender differentiation in donation and 23.81% of the female participants answered that there does not exist gender differentiation in donation.⁷

These findings show that there exists a difference in the attitude of women donating blood between our study and study done by Devi M K et. al, which could be due to regional variations and cultural influences of a particular region.

Table 47: Distribution of participants according to their attitude of whether blood donation is a noble work

In this study, amongst the participants, majority, 62.75% had an optimistic outlook that donating blood is a noble work, 22.87% stated don't know and 14.37% had a pessimistic outlook that donating blood is not a noble work.

A similar study conducted by Limaye D et. al, in Mumbai, revealed that 96% of the male participants answered that donating blood is a generous act and 94% of the female participants answered that donating blood is a generous act. ⁴

Another study conducted by Swetha T et. al, revealed that majority of the participants, 98.2% answered donating blood is a humanitarian work, 1.8% of the participants answered donating blood is a humanitarian work. ²⁷

These similar findings between our study and the studies conducted by Limaye D et. al and Swetha T et. al, reveal that, most of the students have a positive attitude that blood donation is a noble work.

Table 48: Distribution of participants according to their attitude of whether blood donation leads to cancer

In this study, a larger portion of participants, 70.37% had an optimistic outlook that blood donation does not lead to cancer, 22.75% of the participants answered don't know and 6.87% had a pessimistic outlook that donating blood causes cancer.

A study conducted by Alaskar S A et. al, revealed that, amid the participants 86.8% mentioned that blood donation is dangerous, 11.9% mentioned that blood donation is not dangerous and 1.3% mentioned don't know. ²⁹

Table 49: Distribution of participants according to their attitude of whether blood donation is harmful to health

In this study, majority of the participants, 73% had an optimistic outlook that donating blood does not cause harm to health, 19.12% mentioned don't know and 7.87% had a pessimistic outlook that donating blood causes harm to health.

A similar study conducted by Rajeshwari S et.al, in Raichur, revealed that 11% of the engineering students had the belief that blood donation is harmful and 0% of the medical students had the belief that blood donation is harmful.¹⁵

These findings between our study and the study conducted by Rajeshwari S et.al, reveal that, a larger part of students have a positive attitude that donating blood does not cause harm to health.

Table 50: Distribution of participants according to their attitude of whether a person can be infected by donating blood

In this study, amongst the participants, majority, 55.25% mentioned that a person cannot be infected by donating blood, 24% mentioned don't know and 20.75% mentioned that a person can be infected by donating blood.

A similar study conducted by Raghuwanshi B. et. al, in Bhubaneswar city, revealed that 67.9% of the non-medical students answered that by donating blood a person can contract infection and 32.1% of the medical students answered that by donating blood a person can contract infection.⁸

A similar study by Mussema A et. al, revealed that, amid the participants 34.1% mentioned that a donor can contract infection by donating blood.²⁰

Table 51: Distribution of participants according to their attitude of whether blood donation is painful

In this study, amongst the participants, majority, 56.50% responded that blood donation procedure is not painful, 24.12% of the participants responded don't know and 19.37% responded that blood donation procedure is painful.

A similar study conducted by Raghuwanshi B et. al, in Bhubaneswar city, revealed that 75% of the non-medical students had the attitude that blood donation causes pain and discolouration at the site and 25% of the medical students had the attitude that blood donation causes pain and discolouration at the site.⁸

Table 52: Distribution of participants according to their attitude of whether they would donate blood if they are paid for it

In this study, amongst the participants, 42.87% responded that they would donate blood without being paid for it, 31.12% responded that they would donate blood if they are paid for it and 26% responded don't know.

A similar study conducted by Yeravdekar R et.al, showed that, amongst the participants, 56.6% answered that they were not interested in donating blood in return of money, 29.6% stated cannot comment and 13.7% stated that they were interested in donating blood in return of money.³

These findings between our study and the study conducted by Yeravdekar R et.al, reveal that, most of the students have an optimistic outlook that they were ready to donate blood without being paid for it.

Table 53: Distribution of participants according to their attitude of whether they would like to donate blood to strangers who are in need

In this study, a larger portion of participants, 70.87% stated that they would like to donate blood to strangers who needed blood, 19.87% stated don't know and 9.25% stated that they would not like to donate blood to strangers who needed blood.

A similar study done by Raghuwanshi B et.al, in Bhubaneswar city, revealed that 26% of the non-medical students answered that they were ready to donate blood

to help unknown people and 74% of the medical students answered that they were ready to donate blood to help unknown people.⁸

Table 54: Distribution of participants according to their attitude of whether blood donation causes temporary weakness/ fainting

In this study, amid the participants, 54.50% correctly answered that blood donation causes temporary weakness/fainting, 25% mentioned that blood donation does not cause temporary weakness/fainting and 20.50% mentioned don't know.

A similar study done by Raghuwanshi B et. al, in Bhubaneswar city revealed that, amid the participants, 59.5% of the non-medical students answered that blood donation causes temporary weakness/fainting and 40.5% medical students answered that blood donation causes temporary weakness/fainting.⁸

Table 55: Distribution of participants according to their attitude of whether they feel that too much blood will be collected during the blood donation process

In this study, amid the participants, 49.87% stated that too much blood will not be collected during the blood donation procedure, 30% stated don't know and 20.12% stated that too much blood will be collected during the blood donation procedure.

A study conducted by Kocic N et. al, showed that, amid the participants, 3.6% stated that they had a fear that donated blood will be sold.³⁰

Table 56: Distribution of participants according to their attitude of whether they feel that the donated blood will be misused by the blood bank

In this study, amid the participants, 48.50% stated that the collected blood will not be misused by the blood bank, 34.62% stated don't know and 16.87% stated that the collected blood will be misused by the blood bank.

A similar study Swetha T et. al, in Chennai, revealed that majority of the participants, 64.1% answered that the blood will not be misused by the blood bank, 24.6% mentioned not sure and 11.3% mentioned that the blood will be misused by the blood bank.²⁷

Another study conducted by Islam K N et. al, revealed that, amid the participants, 97.1% mentioned that blood will not be misused in hospitals and 6% mentioned that blood will be misused in hospitals.¹⁸

These findings between our study and the studies conducted by Swetha T et. al and Islam K N et.al, reveal that, most of the students have an optimistic outlook that the donated blood will not be misused by the blood bank.

Table 57: Distribution of participants according to the attitude score

In this study, majority of the participants 63.37% possessed a positive attitude and 36.6% possessed a negative attitude.

A similar study conducted by Kote N et. al, revealed that among the engineering students 53%, 25%, 12%, 7%, 3% scored 100%, between 75 to 99.9%, between 50 to 74.9%, between 25 to 49.9%, <25% respectively in attitude aspect. Among the medical students 81%, 16%, 3%, 0%, 0% scored 100%, between 75 to 99.9%, between 50 to 74.9%, between 25 to 49.9%, <25% respectively in attitude aspect. Among the dental students 79%, 19%, 2%, 0%, 0% scored 100%, between 75 to 99.9%, between 50 to 74.9%, between 25 to 49.9%, <25% respectively in attitude aspect.⁹

Another study conducted by Gebresilase H et. al, revealed that 46.7% of the health science students and 35.6% of the other group students had a favourable attitude.¹²

The good attitude score among the health science students could be due to their having more knowledge regarding blood donation which could be translating into a favourable attitude among them.

Another study conducted by Devi M K et. al, revealed that amid the participants, 25% had good attitude.⁷

Table 58: Distribution of participants according to their practice of whether they have ever donated blood

In this study, a larger portion of participants, 78.37% had never donated blood and 21.62% had donated blood.

A similar study conducted by Yeravdekar R et. al, revealed that a larger portion of participants, 64.4% had never donated blood and 35.6% had donated blood.³

A similar study conducted by Bosco R J et. al, in Trichy District, Tamil Nadu, revealed that, amid the participants, 79.2% had never donated blood and 20.8% had donated blood.²

A similar study conducted by Devi M K et. al, in Coimbatore, Tamil Nadu, revealed that 14.63% of the males had donated blood and 14.29% of the females had donated blood.⁷

These findings between study conducted by us and the studies conducted by Yeravdekar R et. al, Bosco R J et. al, and Devi M K et. al reveal that most of the college going students have not donated blood, which could be because of misconceptions the students have about donating blood.

Table 59: Distribution of participants according to their practice of whether if they had ever donated blood in the past, how many times had they donated

In this study, majority of the participants, 71.09% had donated blood once and 28.90% of the participants had donated blood greater than one time.

A similar study conducted by Yeravdekar R et. al, revealed that amid the participants 43.9% donated blood once and 56.1% donated blood more than one time.³

A study conducted by Mussema A et. al, revealed that amid the participants 14.8% had given blood once, 2.8% had given blood twice and 1.8% had given blood more than twice.²⁰

Table 60: Distribution of participants according to their practice if they had ever donated blood in the past, what were the reasons for their donation

In this study, amid the participants who had donated, majority, 25% answered blood donation saves lives, 23% stated blood donation is a moral responsibility, 11.41% stated it is a personal choice, 8.15% stated during blood donation campaigns, 6.52% stated in case of emergencies, 5.43% stated best way to donate blood is voluntary and non-remunerated, 4.89% stated others, 4.34% stated blood donation is good for one's own health, 2.71% stated it renews their blood, 1.63% stated I will donate blood if I am given a reward for it, 1.63% stated to help others, 1.63% stated donated blood in college, 1.63% stated answered donated to the family member, 1.08% stated if the process of blood donation takes less time, 1.08% stated it's a good will work, that's why everyone should donate and 0.54% stated my birthday purpose.

A similar study conducted by Rajeshwari S et. al, in Raichur, revealed that 93% of the engineering students answered if it improves/saves someone's life and 96% of the medical students answered if it improves/saves someone's life, 91% of the engineering students answered in emergencies and 95% of the medical students answered in emergencies, 59% of the engineering students answered it is a personal choice and 73% of the medical students answered it is a personal choice, 54% of the engineering students answered during blood collection camps or drives and 51% of the medical students answered during blood collection camps or drive, 52% of the engineering students answered I donate to get certificate and 71% of the medical students answered I donate to get certificate, 43% of the engineering students answered it renews my blood and 26% of the medical students answered it renews my blood, 18% of the engineering students answered only if family and friends need blood and 24% of the medical students answered only if family and friends need blood, 9% of the engineering students answered if the donation procedure takes less time and 9% of the medical students answered if the donation procedure takes less time, 7% of the engineering students answered if given a reward for donating blood and 8% of the medical students answered if given a reward for donating blood.¹⁵

A similar study conducted by Devi M K et. al, in Coimbatore Tamil Nadu, revealed that 20.33% of the male participants answered that they have a social responsibility in blood donation and 14.29% of the female participants answered that they have a social responsibility in blood donation.⁷

A similar study conducted by Islam K N et. al, revealed that 73.26% of the participants answered to save life, 39.04% of the participants answered for own physical benefit, 17.11% of the participants answered to get free medical checkup,

52.41% of the participants answered social work and 16.58% of the participants answered others.¹⁸

A study conducted by Mishra S K et. al, in North India, revealed that amid the participants, 74.2% stated moral responsibility, 12.2% stated altruism, 3.4% stated of the participants answered peer pressure, 2.4% stated to lose weight, 2% stated to get my blood group done for free, 1.4% stated to decrease my cholesterol levels, 1.2% stated to decrease my haemoglobin level to acceptable level, 1% stated to increase my attendance in college lectures, 0.8% stated to get my HIV/AIDS test done for free, 0.4% stated to get mementoes/gifts etc to impress my family members/peer group, 0.2% stated to decrease my iron stores and in turn decrease heart disease risk.¹⁴

Table 61: Distribution of participants according to their practice if they had not donated blood in the past, what were the reasons for not donating blood

In this study, amid those who had not donated blood, majority, 21% answered fear related to needle pricks, 13.55% stated lack of opportunity, 12.91% stated I feel I am medically unfit to donate blood, 10.68% stated no one has ever asked me to donate blood, 9.25% stated parents do not allow, 5.58% stated never got chance to donate, 4.14% stated I am not aware of blood donation, 3.82% stated my choice, 3.66% stated there are side effects of donating blood, 3.66% stated I may need to donate blood to my family, relatives and friends in the future 3.34% stated no information about where, when and how to donate blood, 3.34% stated fear of knowing my status, 1.91% stated due to less weight, 1.11% stated others, 0.63% stated for age limit and 0.63% stated due to low heamoglobin, 0.47% stated I was not feeling well, 0.15% stated I don't have blood and 0.15% stated don't know blood group.

A similar study done by Rajeshwari S et. al, in Raichur, showed that, 39% of the engineering students answered not aware of the process and 13% of the medical students answered not aware of the process, 39% of the engineering students answered they were not asked by anyone for blood donation and 13% of the medical students answered they were not asked by anyone for blood donation, 31% of the engineering students answered family members do not allow and 5% of the medical students answered family members do not allow, 20% of the engineering students answered the blood will not be used properly and 4% of the medical students answered the blood will not be used properly, 17% of the engineering students answered fear of needle prick and 3% of the medical students answered fear of needle prick, 17% of the engineering students answered fear of losing weight and becoming weak and 1% of the medical students answered fear of losing weight and becoming weak, 10% of the engineering students answered blood bank does not provide for free to patients who require and 2% of the medical students answered blood bank does not provide for free to patients who require, 8% of the engineering students answered fear of discovering their status and 0% of the medical students answered fear of discovering their status, 8% of the engineering students answered fear of acquiring HIV infection and 2% of the medical students answered fear of acquiring HIV infection, 7% of the engineering students answered that the blood bank is very far from their place and 2% of the medical students answered that the blood bank is very far from their place, 5% of the engineering students answered had previous bad experience during donation and 1.5% of the medical students answered had previous bad experience during donation, 4% of the engineering students answered religious beliefs and 0% of the medical students answered religious beliefs, 4% of the engineering students answered that they are not obliged to donate blood and 1.5% of the medical students answered that they are not obliged to donate blood, 3% of the

engineering students answered that blood donation is painful and 2% of the medical students answered blood donation is painful.¹⁵

A similar study conducted by Raghuwanshi B et. al, in Bhubaneswar city, revealed that 73.2% of the non-medical students answered fear of the procedure and 26.8% of the medical students answered fear the procedure, 28.6% of the non-medical students lack of opportunity and 71.4% of the medical students answered lack of opportunity, 39.3% of the non-medical students answered do not know the places to give blood and 60.8% of the medical students answered do not know the places to give blood, 39.5% of the non-medical students answered feel medically not fit and 60.5% of the medical students answered feel medically not fit, 61.8% of the non-medical students answered nobody has ever brought it up to me to donate and 38.2% of the medical students answered nobody has ever brought it up to me to donate.⁸

A study conducted by Mussema A et. al, revealed that, amid the participants, 55.34% stated fear of blood donation, 13.70% stated it takes long time, 11.70% stated medically unfit, 7.90% stated under weight, 5.36% stated cultural or religious rejection and 6% stated no reason for not donating blood.²⁰

Table 62: Distribution of participants according to their practice of whether if they had donated blood in the past, how was their experience

In this study, amid those who had donated blood, majority, 90.17% answered that they had a good experience and 9.82% mentioned that they had a bad experience.

A similar study done by Kote N et. al, in Bengaluru, Karnataka, revealed that 37% experienced unpleasant situation during previous voluntary blood donation.⁹

Table 63: Distribution of participants according to their practice of whether if they had donated blood in the past, did they feel happy with the safety measures taken by the medical attendant during the blood donation process

In this study, amid those who had donated blood, majority, 86.70% answered that they felt happy with the safety measures taken by the medical attendant during the donation procedure and 13.29% stated that they did not feel happy with the safety measures taken by the medical attendant during the donation procedure.

A study conducted by Mulay H D et. al, in Bijapur, Karnataka, revealed that 90.20% of the participants experienced some discomfort after blood donation.³¹

Table 64: Distribution of participants according to their practice of whether if they had donated blood in the past, did the medical attendants treated them well post blood donation

In the present study, amid those who had donated blood, majority, 79.76% answered that the medical attendants treated them well post blood donation and 20.23% of the participants answered that the medical attendants did not treat them well post donation.

A study conducted by Hossain M I et. al, revealed that 73.4% of the male participants were satisfied in donating blood and 26.6% of the male participants were not satisfied in donating blood, 34% of the female participants were satisfied in donating blood and 66% of the female participants were not satisfied in donating blood.¹¹

Table 65: Distribution of participants according to their practice of would they be interested to donate blood if an opportunity will be given to them

In this study, a larger part of the participants, 64.25% answered positively that they would be interested in giving blood if an opportunity will be given to them 24.87% of the participants answered that they would not be interested in giving blood if an opportunity will be given to them and 10.87% of the participants answered don't know.

A similar study conducted by Rajeshwari S et. al, in Bengaluru, Karnataka, revealed that 94% of the medical students answered that they were ready for donating blood in future, 91% of the dental students answered that they were ready for donating blood in future and 78% of the engineering students answered that they were ready for donating blood in future.¹⁵

Contrastingly, a study done by Devi M K et. al, in Coimbatore, Tamil Nadu, revealed that 22.76% of the male participants answered that they were ready for giving blood in the future and 14.29% of the female participants answered that they were ready for giving blood in the future.⁷

Another study conducted by Mussema A et. al, revealed that, 34.1% of the participants answered that they were open to giving blood in the future and 65.9% answered that they were open to giving blood in the future.²⁰

The similar findings between study done by us and the study conducted by Rajeshwari S et. al, which was also conducted in Karnataka, reveal that most of the students are interested in donating blood if an opportunity would be given to them. But the different findings between study done by us and the studies conducted by Devi M K et. al and Mussema A et. al, could be because of variations in blood

donation practices across regions and the cultural and religious practices prevalent in some regions could be preventing the students from donating blood.

Table 66: Distribution of participants according to their practice of would they like to donate blood regularly in the future

In this study, a greater portion of the participants, 61.87% answered positively that they would like to donate blood regularly in the future, 28.12% stated that they would not like to donate blood regularly in the future and 10% stated don't know.

A similar study conducted by Yeravdekar R et. al, revealed that amid the participants, 53.8% answered that they would like to donate blood regularly, 12.4% answered that they do not like to donate blood regularly and 33.8% of the participants answered that they cannot say.³

A study conducted by Devi M K et. al, in Coimbatore, Tamil Nadu, revealed that 21.95% of the male participants responded that they felt motivated for giving blood and 11.90% of the female participants that they responded that they felt motivated for giving blood.⁷

Table 67: Distribution of participants according to their practice of would they encourage their family, relatives and friends to donate blood

In this study, a larger part of the participants, 74.87% answered positively that they would inspire their family and near and dear ones for giving blood, 15.12% answered that they would not inspire their family and near and dear ones for giving blood and 10% answered don't know.

A similar study conducted by Raghuwanshi B et. al, in Bhubaneswar city, revealed that 58.1% of the non-medical students answered that they would urge their

known people for blood donation and 41.9% of the medical students answered that they would urge their known people for blood donation.⁸

A similar study conducted by Rajeshwari S et. al, in Bengaluru, Karnataka, revealed that 97% of the medical students answered that they would recommend blood donation to their family and friends, 93% of the dental students answered that they would recommend blood donation to their family and friends and 84% of the engineering students answered that they would recommend blood donation to their family and friends.¹⁵

These similar findings between study done by us and the studies conducted by Raghuvanshi B et. al and Rajeshwari S et. al reveal that, most of the students are willing to encourage their family and other people known to them for giving blood.

Table 68: Distribution of participants according to the practice score

In this study, a greater part of the participants 61.37% had favourable practice and 38.6% had unfavourable practice.

A similar study conducted by Devi M K et. al, revealed that larger part of the participants had good practice (24%).⁷

Table 69: Association between knowledge score regarding blood donation and sociodemographic variables

In this study, females scored significantly higher than males, students aged ≥ 21 years scored significantly higher than students of age ≤ 20 years, among academic disciplines, students from Computer science, Electronic and Communication, Mechanical and (Electrical or AI or Chemical) scored significantly higher knowledge scores than Civil engineering students, participants with known blood groups (O, A,

B, AB) had higher significant knowledge scores than those unaware of their blood group, additionally, students in the 1st year and 2nd year demonstrated 4.93 and 2.98 significantly greater knowledge scores when compared with who were in the 4th year.

A similar study conducted by Yeravdekar R et. al, revealed that males, students aged 25 years or above and students pursuing postgraduate education had more knowledge.³

Another study conducted by Raghuwanshi B et. al, in Bhubaneswar city, revealed that females had better knowledge than males, medical students had better knowledge than non-medical students, students whose parents' profession was non-medical had better knowledge than students whose parents' profession was medical.⁸

A study conducted by Swetha T et. al, revealed that students of ≥ 21 years had more knowledge than those aged younger.²⁷

Another study conducted by Gebresilase H et. al, revealed that, among the health science students females had better knowledge than males. Among the non-health students, students of Protestant religion had better knowledge than orthodox religion and students with urban residence had better knowledge than rural residence.¹²

The similar finding of the present study and the studies conducted by Raghuwanshi B et. al, Gebresilase H et. al, which show that females had better knowledge than males could be due to the reason that females tend to read more than males.

The similar finding of the present study and the studies conducted by Yeravdekar R et. al, Swetha T et. al, which show that students aged ≥ 21 years had better

knowledge than the younger, could be because of the reason that as students age more, they tend to read more and acquire more knowledge.

Table 70: Association between attitude score regarding blood donation and sociodemographic variables

In this study, females scored significantly higher on attitude score as compared to males, individuals belonging to age ≥ 21 had significantly higher attitude score than those ≤ 20 , further analysis revealed that those from nuclear families scored significantly higher on attitude scores as compared to those from broken families, participants with known blood groups (O, A, B, AB) had higher significant attitude scores than those unaware of their blood group, additionally, students in the 1st and 2nd years demonstrated significantly higher attitude scores when compared with who were in the 4th year, among academic disciplines, students from Computer science, Electronic and Communication, (Electrical or AI or Chemical) had significantly higher attitude scores than Civil engineering students.

A study conducted by Swetha T et. al, revealed that students of ≥ 21 years had an optimistic outlook about blood donation than those aged younger. Males were more optimistic about blood donation than the females.²⁷

This similar finding between the present study and the study conducted Swetha T et. al, where students aged ≥ 21 years had more positive attitude than those aged younger could be because of the reason that as age increases, maturity in students increases and they understand the value of blood donation and have a positive attitude towards it.

Another study conducted by Gebresilase H et. al, revealed that, among the health science students, students of Oromo ethnicity had more favorable attitude than

Amhara ethnicity. Among the non-health science students, males had more favorable attitude than females, fifth year students had less favorable attitude than third year students.¹²

On the contrary, a study done by Anleye B A et. al, in Ethiopia revealed that students having inadequate knowledge were having unfavorable attitude than the students who were knowledgeable, students aged 26 to 35 years were having unfavorable attitude than the students aged 18 to 25 years.³²

The different finding between the present study and the study conducted by Anleye B A et. al, could be attributed to regional differences where younger students have more favorable attitude than the older students.

Another study done by Islam K N et. al, revealed that males had more positive attitude than females, division of place and time spent on social media were significantly associated with attitude.¹⁸

Table 71: Association between practice score regarding blood donation and sociodemographic variables

In this study, individuals from Joint or Three Generation families scored significantly higher on practice scores as compared to those from broken families, among academic disciplines, students from Mechanical, (Electrical or AI or Chemical) scored significantly higher practice scores than Civil engineering students, participants with known blood groups (O, B) had higher significant practice scores than those unaware of their blood group, Additionally, students in the 1st year and 3rd year demonstrated significantly higher practice scores when compared with who were in the 4th year.

A similar study conducted by Bosco R J et.al, in Trichy District, Tamil Nadu, revealed that blood donation was considerably more in males than in females.²

A similar study conducted by Raghuwanshi B et.al, in Bhubaneswar city, revealed that blood donation was considerably more in non-medical students than the medical students, males than in females, students with parents' in medical jobs than with parents' in non-medical jobs.⁸

Another study conducted by Gebresilase H et.al, revealed that amid health sector students, males had more favorable practice than females. Among the non-health science students, fourth year students had more favorable practice than third year students.¹²

A study conducted by Mussema A et. al, revealed that medical college students had more favorable practice than business and economics students, students with urban residence had more favorable practice than students with rural residence, students who possessed good knowledge had more favorable practice than students with poor knowledge.²⁰

A study conducted by Ibrahim A A et. al, revealed that males had more blood donation practice than females, students aged 24 years and older had more blood donation practice than those aged younger.²⁶

The different finding between the present study and the studies conducted by Bosco R J et.al, Raghuwanshi B et.al, Gebresilase H et.al, Ibrahim A A et. al, where in our study gender was not significantly associated with practice score but in all these studies males had a more favorable practice than females could be because of region specific reasons.

Table 72: Correlation between Knowledge, Attitude and Practice

In this study, there was a moderate degree of positive correlation between knowledge and attitude. In comparison, a minor weak positive correlation between knowledge and practice and a minor weak positive correlation between practice and attitude were present.

A study conducted by Samanta M et. al, showed a positive and significant correlation coefficient between knowledge score and attitude score.³³

These similar findings, suggest that as knowledge increased, it lead to a positive attitude about blood donation which can be translated into practice, so that the young college going students can be a major providers of blood.

CONCLUSION

In this study, a larger part of the students possessed moderate knowledge about blood donation, which could be because the study participants are engineering students and blood donation is not a part of their routine curriculum. A greater portion of the students possessed positive attitude regarding blood donation and a greater portion of the students possessed favorable practice regarding blood donation, which is a positive finding. It highlights that the students are willing to become blood donors.

Further analysis revealed, females, students aged ≥ 21 years, students from Computer science, Electronic and Communication, Mechanical and (Electrical or AI or Chemical) branches, participants with known blood groups (O, A, B, AB), students in the 1st year and 2nd year had higher knowledge scores. Females, students aged ≥ 21 years, students from nuclear families, participants with known blood groups (O, A, B, AB), students in the 1st year and 2nd year, students from Computer science, Electronic and Communication, Mechanical and (Electrical or AI or Chemical) branches, had higher attitude scores. Individuals from Joint or Three Generation families, participants with known blood groups (O, B), students in the 1st year and 3rd year had higher practice scores.

There was a moderate degree of positive correlation between knowledge and attitude, which reveals that as knowledge increased attitude also increased. In comparison, a minor weak positive correlation between knowledge and practice and a minor weak positive correlation between attitude and practice were present.

In this study, amid the total participants, only 21.63% had donated blood and among individuals who had given blood, majority of them 71.09% had donated only

once. Blood donation saves lives was the most commonly cited reason for donation followed by it is a moral responsibility.

A larger part of the participants 78.37% had never donated blood, which could be due to lack of proper understanding of blood donation and the myths and misconceptions about blood donation. Also the students could not be aware of the benefits of donating blood. Among those who did not donate blood, fear related to needle pricks was the most frequently cited reason followed by lack of opportunity.

However, greater part of the participants 61.87% answered positively that they like to donate blood regularly in the future. Also larger of the participants 74.87% answered they would encourage their family, other people known to them for giving blood. Efforts should focus on enhancing the knowledge and addressing the causes for not giving blood.

RECOMMENDATIONS

Based on the findings of the present study, the following recommendations can be made

- Implement targeted campaigns in colleges in order to enhance the awareness regarding blood donation and drive away the myths and misconceptions about it
- Initiatives like World Blood Donor Day can be organized by a group of medical professionals so that the college going students have the basic knowledge concerning blood donation
- Blood donation camps can be organized in the colleges, so that the students can donate blood and get rid of any misconceptions about the same
- For the female students, special counselling sessions can be held wherein the barriers hindering them from donating blood can be addressed
- Periodic awareness sessions should be organized in the colleges, so that it motivates the students to become regular donors
- Street plays, movies can be organized for enhancing the awareness of the students
- To use online platforms (social media) for broader dissemination of information concerning blood donation
- To incorporate health care professionals in awareness programmes so that accurate information can be provided to the students
- To provide proper guidance and motivation to the students regarding blood donation
- To monitor the effectiveness of various educational and awareness programmes on a regular basis

STRENGTHS

The strengths of this study are

- The present study was conducted with a large sample size
- The use of validated instruments like Cronbach's alpha for assessing questionnaire reliability, assures the accuracy and consistency of data collection

LIMITATIONS

The limitations of this study are

- The study was limited to engineering college students in Belagavi, hence the results cannot be widely generalized to the entire community
- The study was done in only four engineering colleges, hence the results cannot be generalized to the entire community
- The answers provided regarding favorable practices, such as donating blood were not assessed by verification of any certificates given for the same
- The impact of local cultural factors hindering blood donation were not fully investigated

SUMMARY

This study was a cross sectional study conducted among 800 engineering students in Belagavi from 1st April 2023 to 31st March 2024. It was carried out to evaluate the knowledge, attitude and practices regarding voluntary blood donation.

The mean age was 20.19±1.41. A greater portion of the participants (55.87%) were males, 60.75% were from an urban background. A greater portion of the participants (33.50%) were from Electronics and Communication branch. Majority (87.62%) were Hindu by religion, 64.87% were from a nuclear family and majority (49.50%) belonged to class I socio-economic status according to modified B G Prasad classification.

In this study, amid the 800 participants, 15.6% had good knowledge, 63.37% had a positive attitude and 61.37% had a favourable practice.

Females, students aged ≥ 21 years, students from Computer science, Electronic and Communication, Mechanical and (Electrical or AI or Chemical) branches, participants with known blood groups (O, A, B, AB), students in the 1st year and 2nd year had higher knowledge scores. Females, students aged ≥ 21 years, students from nuclear families, participants with known blood groups (O, A, B, AB), students in the 1st year and 2nd year, students from Computer science, Electronic and Communication, Mechanical and (Electrical or AI or Chemical) branches, had higher attitude scores. Individuals from Joint or Three Generation families, participants with known blood groups (O, B), students in the 1st year and 3rd year had higher practice scores.

There was a moderate degree of positive correlation between knowledge and attitude. In comparison, a minor weak positive correlation between knowledge and practice and a minor weak positive correlation between attitude and practice were present.

In this study, amid the total participants, only 21.63% had donated blood and among individuals who had given blood, majority of them 71.09% had donated only once. Blood donation saves lives was the most commonly cited reason for donation followed by it is a moral responsibility.

A larger part of the participants 78.37% had never donated blood, which could be due to lack of proper understanding of blood donation and the myths and misconceptions about blood donation. Also the students could not be aware of the benefits of donating blood. Among those who did not donate blood, fear related to needle pricks was the most frequently cited reason followed by lack of opportunity.

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ANNEXURE – I

INFORMED CONSENT FORM

**“KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING
VOLUNTARY BLOOD DONATION AMONG ENGINEERING STUDENTS
IN BELAGAVI”**

Introduction: Human blood and blood products are vital, unique, life saving components capable of saving millions of lives if ready availability is ensured. Blood procured from voluntary non-remunerated donors is the safest source of blood. One of the potential sources for voluntary blood donation can be recruited from the young college going students who are healthy and fit to donate blood voluntarily. This is a one-year study is to assess knowledge, attitude and practices regarding voluntary blood donation among engineering students in Belagavi.

Explanation of procedure: In this study you will have to answer a few predesigned questions about your socio-demography details and about your knowledge, attitude and practices regarding voluntary blood donation. The entire procedure may take 20-30 minutes. If you agree to participate, the required information will be collected.

Withdrawal from participation in the study: Participation in this study is voluntary. You will be free to decide whether to participate in this study or continue participation once enrolled. In case you decide to withdraw your participation, you are free to do so. However, please convey the decision to the principal investigator.

Possible benefits from participating in the study: You will not get any benefits by participating in this study. The data gathered will help population at large.

Possible risks from participating in the study: There are no risks involved in participating in this study.

Privacy and confidentiality: The information collected from you will be coded, to prevent any person to identify you. Your identity will never be revealed. The data collected from you will be kept confidential and only processed or aggregated data will be used for publication.

Financial incentives: You will not receive any payment for participating in this study.

Cost of investigations done during the course of study will be paid by the ~~principal investigator/ Participant~~. Not applicable

Authorization for publication of aggregated data: Results obtained after processing of the aggregated data will be published for scientific purpose and or presented to scientific groups. However, your identity will never be revealed.

Questions: If you have any question or complaints with regard to your right as study participant you may contact Dr Harsha Hegde, Chairperson, Ethical committee of JNMC, 0831-2473777 Extension 4052.

Legal rights: By signing this consent form, we are not waving any of your legal rights

CONSENT STATEMENT

I am making a voluntary decision to participate in the study “**KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING VOLUNTARY BLOOD DONATION AMONG ENGINEERING STUDENTS IN BELAGAVI**”. My signature below indicates that I have decided to participate and I have read the information provided above or the information provided above has been read to me in the language that I understand best. I was given the opportunity to ask questions and that they have been answered to my satisfaction.

Name of the participant:

Signature or left thumb impression of the participant:

Name of the witness:

Signature or left thumb impression of the witness:

Name of the investigator:

Signature of the investigator:

ANNEXURE-II

QUESTIONNAIRE

**“Knowledge, Attitude and Practices regarding Voluntary Blood Donation among
Engineering Students in Belagavi”**

1. SOCIO-DEMOGRAPHIC DETAILS

College Name: _____

Sl. No:

1. Name: _____

2. Age: _____ years

3. Sex: a) Male b) Female

4. Address: a) Urban b) Rural

5. Branch of study: a) Computer Science b) Electronics and communication c)
Electrical d) Civil e) Mechanical f) AI Robotic g) Chemical

6. Year of study: a) 1st year b) 2nd year c) 3rd year d) 4th year

7. Religion: a) Hindu b) Muslim c) Christian d) Jain e) Others, specify _____

8. Type of family: a) Nuclear b) Joint c) Three generation
d) Broken e) Others, specify _____

9. Total monthly income of the family:

10. Number of family members:

11. Per capita income:

12. Socio-economic class according to modified B G Prasad classification:

a) Class I b) Class II c) Class III d) Class IV e) Class V

2. KNOWLEDGE TOWARDS VOLUNTARY BLOOD DONATION

1. Do you know your blood group?

- a) Yes
- b) No

If yes, what is your blood group: _____

2. What is the minimum age required for blood donation?

- a) 18 years
- b) 20 years
- c) 25 years
- d) 28 years
- e) Don't know

3. What is the minimum weight of a person required for blood donation?

- a) > 30 kgs
- b) > 40 kgs
- c) > 50 kgs
- d) < 30 kgs
- e) Don't know

4. What is the minimum hemoglobin (Hb) required for blood donation?

- a) 10 mg/dl
- b) 12 - 13 mg/dl
- c) 11 mg/dl
- d) 8 mg/dl
- e) Don't know

5. How frequently can a healthy person donate blood?

- a) 3 times in a year
- b) 4 times in a year

- c) Twice in a year
 - d) Once in a year
 - e) Don't know
6. What is the volume of blood collected during each regular blood donation?
- a) 100 ml
 - b) 200 ml
 - c) 350 – 450 ml
 - d) 500 ml
 - e) Don't know
7. The donated blood can be stored at optimal temperature for how many days?
- a) 15 days
 - b) 20 days
 - c) > 25 days
 - d) 10 days
 - e) Don't know
8. How many lives can be saved from each unit of donated blood?
- a) One life
 - b) Three lives
 - c) Two lives
 - d) Four lives
 - e) Don't know
9. Is the donated blood screened for transmissible infections like HIV, Hepatitis and Malaria?
- a) Yes
 - b) No
 - c) Don't know

10. A person with which blood group is the universal donor?

- a) AB +ve
- b) O +ve
- c) O -ve
- d) B +ve
- e) Don't know

11. Individual of which blood group is the universal recipient?

- a) O -ve
- b) AB +ve
- c) O +ve
- d) AB -ve
- e) Don't know

12. What are the components of blood prepared in a blood bank?

- a) Red blood cells
- b) Platelets
- c) Plasma
- d) All of the above
- e) Don't know

13. Can diseases be transmitted during blood donation?

- a) Yes
- b) No
- c) Don't know

14. What is the duration for the replenishment of the lost volume of blood?

- a) 15 days
- b) 24 hours
- c) 2 days

- d) 4 days
 - e) Don't know
15. For how many hours before blood donation should a person avoid alcohol intake?
- a) 6 hours
 - b) 2 hours
 - c) 24 – 48 hours
 - d) 15 hours
 - e) Don't know
16. Do you know the place to donate blood?
- a) Blood bank and blood donation campaigns
 - b) OPD
 - c) ICU
 - d) Wards
 - e) Don't know
17. Can a menstruating girl donate blood?
- a) Yes
 - b) No
 - c) Don't know
18. Can a person donate blood after vaccination?
- a) Yes
 - b) No
 - c) Don't know
19. Which of the following patients require blood regularly?
- a) Cancer
 - b) Bone marrow failure
 - c) Thalassemia

- d) All of the above
- e) Don't know

20. Is it mandatory to obtain consent before blood donation?

- a) Yes
- b) No
- c) Don't know

21. Can a person donate blood on an empty stomach?

- a) Yes
- b) No
- c) Don't know

22. Which of the following are contraindications of blood donation?

- a) Sore throat
- b) If a person recently had tattoo or body piercing within 6 months
- c) Common cold
- d) Fever on the day of blood donation
- e) All of the above
- f) Don't know

23. Can a person who has been treated for Rabies/ Hepatitis B in the past one year donate blood?

- a) Yes
- b) No
- c) Don't know

24. Can a person treated for malaria in the past 3 months donate blood?

- a) Yes
- b) No
- c) Don't know

25. Can pregnant/lactating women donate blood?
- a) Yes
 - b) no
 - c) Don't know
26. Can a hypertensive and diabetic patient donate blood?
- a) Yes
 - b) No
 - c) Don't know
27. Can a person with heart disease donate blood?
- a) Yes
 - b) No
 - c) Don't know
28. Does an average blood donation process last for 20 minutes?
- a) Yes
 - b) No
 - c) Don't know
29. Which is the best source for blood donation?
- a) Voluntary donation
 - b) Replacement donation
 - c) Paid professional donation
 - d) Don't know
30. Do you know the benefits of donating blood?
- a) Yes
 - b) No
 - c) Don't know

3. ATTITUDE TOWARDS VOLUNTARY BLOOD DONATION

1. Can blood donation make a person weak?
 - a) Yes
 - b) No
 - c) Don't know

2. Can blood donation lead to anaemia?
 - a) Yes
 - b) No
 - c) Don't know

3. Can blood donation lower immunity?
 - a) Yes
 - b) No
 - c) Don't know

4. Should blood be donated only to family members, relatives and friends?
 - a) Yes
 - b) No
 - c) Don't know

5. Should women not donate blood?
 - a) Yes
 - b) No
 - c) Don't know

6. Is blood donation a noble work?
 - a) Yes
 - b) No
 - c) Don't know

7. Does blood donation lead to cancer?

- a) Yes
- b) No
- c) Don't know

8. Is blood donation harmful to health?

- a) Yes
- b) No
- c) Don't know

9. Can a person be infected by donating blood?

- a) Yes
- b) No
- c) Don't know

10. Is blood donation painful?

- a) Yes
- b) No
- c) Don't know

11. Would you donate blood if you are paid for it?

- a) Yes
- b) No
- c) Don't know

12. Would you like to donate blood to strangers who are in need?

- a) Yes
- b) No
- c) Don't know

13. Does blood donation cause temporary weakness/ fainting?

- a) Yes

- b) No
- c) Don't know

14. Do you feel that too much blood will be collected during the blood donation process?

- a) Yes
- b) No
- c) Don't know

15. Do you feel that the donated blood will be misused by the blood bank?

- a) Yes
- b) No
- c) Don't know

4. PRACTICES TOWARDS VOLUNTARY BLOOD DONATION

1. Have you ever donated blood?

- a) Yes
- b) No

2. If you have ever donated blood in the past, how many times have you donated?

- a) Once
- b) More than once

3. If you have ever donated blood in the past, what were your reasons for donation?

- a) Blood donation is a moral responsibility
- b) Blood donation saves lives
- c) Best way to donate blood is voluntary and non-remunerated
- d) Blood donation is good for one's own health
- e) It is a personal choice
- f) It renews my blood
- g) In case of emergencies

- h) During blood donation campaigns
- i) If the process of blood donation takes less time
- j) I will donate blood if I am given a reward for it
- k) I will donate blood if I get a certificate for it
- l) Others, specify _____

4. If you have not donated blood in the past, what are the reasons for not donating blood?

- a) Fear related to needle pricks
- b) I feel I am medically unfit to donate blood
- c) No one has ever asked me to donate blood
- d) Parents do not allow
- e) No information about where, when and how to donate blood
- f) Fear of knowing my status
- g) I am not aware of blood donation
- h) There are side effects of donating blood
- i) I may need to donate blood to my family, relatives and friends in the future
- j) Lack of opportunity
- k) Others, specify _____

5. If you have donated blood in the past, how was your experience?

- a) Good
- b) Bad

6. Did you feel happy with the safety measures taken by the medical attendant during the blood donation process?

- a) Yes
- b) No

7. Did the medical attendants treat you well post blood donation?

- a) Yes
- b) No

8. Would be interested to donate blood if an opportunity will be given to you?

- a) Yes
- b) No
- c) Don't know

9. Would you like to donate blood regularly in the future?

- a) Yes
- b) No
- c) Don't know

10. Would you encourage your family, relatives and friends to donate blood?

- a) Yes
- b) No
- c) Don't know

ANNEXURE-III - KEY TO MASTER CHART

1. SOCIO-DEMOGRAPHIC DETAILS

College Name: KLE Dr. M S Sheshgiri College of Engineering and Technology- 1

Jain College of Engineering- 2

SGBIT (S G Balekundri Institute of Technology)- 3

Maratha Mandal Engineering College- 4

Name: _____

Age: _____years

Sex: a) Male-1 b) Female-2

Address: a) Urban-1 b) Rural-2

Branch of study: a) Computer Science-1 b) Electronics and communication-2

c) Electrical-3 d) Civil-4 e) Mechanical-5 f) AI Robotic-6

g) Chemical-7

Year of study: a) 1st year-1 b) 2nd year-2 c) 3rd year-3 d) 4th year-4

Religion: a) Hindu-1 b) Muslim-2 c) Christian-3 d) Jain-4 e) Others, _____

specify

Type of family: a) Nuclear-1 b) Joint-2 c) Three generation-3

d) Broken-4 e) Others-5

Total monthly income of the family:

Number of family members:

Per capita income:

Socio-economic class according to modified B G Prasad classification:

b) Class I-1 b) Class II-2 c) Class III-3 d) Class IV-4 e) Class V-5

2. KNOWLEDGE TOWARDS VOLUNTARY BLOOD DONATION

1. Do you know your blood group?

- c) Yes-1
- d) No-2

If yes, what is your blood group: _____

- O positive-1
- A positive-2
- B positive-3
- AB positive-4
- O negative-5
- A negative-6
- B negative-7
- AB negative-8

2. What is the minimum age required for blood donation?

- f) 18 years-1
- g) 20 years-2
- h) 25 years-3
- i) 28 years-4
- j) Don't know-5

3. What is the minimum weight of a person required for blood donation?

- f) > 30 kgs-2
- g) > 40 kgs-3
- h) > 50 kgs-1
- i) < 30 kgs-4
- j) Don't know-5

4. What is the minimum hemoglobin (Hb) required for blood donation?
- f) 10 mg/dl- 2
 - g) 12 - 13 mg/dl- 1
 - h) 11 mg/dl- 3
 - i) 8 mg/dl- 4
 - j) Don't know- 5
5. How frequently can a healthy person donate blood?
- f) 3 times in a year-2
 - g) 4 times in a year-1
 - h) Twice in a year-3
 - i) Once in a year-4
 - j) Don't know-5
6. What is the volume of blood collected during each regular blood donation?
- f) 100 ml- 2
 - g) 200 ml- 3
 - h) 350 – 450 ml- 1
 - i) 500 ml-4
 - j) Don't know- 5
7. The donated blood can be stored at optimal temperature for how many days?
- f) 15 days-2
 - g) 20 days-3
 - h) > 25 days-1
 - i) 10 days-4
 - j) Don't know-5
8. How many lives can be saved from each unit of donated blood?
- f) One life-2

- g) Three lives-1
- h) Two lives-3
- i) Four lives-4
- j) Don't know-5

9. Is the donated blood screened for transmissible infections like HIV, Hepatitis and Malaria?

- d) Yes-1
- e) No-2
- f) Don't know-3

10. A person with which blood group is the universal donor?

- f) AB +ve-2
- g) O +ve-1
- h) O -ve-3
- i) B +ve-4
- j) Don't know-5

11. Individual of which blood group is the universal recipient?

- f) O -ve-2
- g) AB +ve-1
- h) O +ve-3
- i) AB -ve-4
- j) Don't know-5

12. What are the components of blood prepared in a blood bank?

- f) Red blood cells-2
- g) Platelets-3
- h) Plasma-4
- i) All of the above-1

j) Don't know-5

13. Can diseases be transmitted during blood donation?

d) Yes-1

e) No-2

f) Don't know-3

14. What is the duration for the replenishment of the lost volume of blood?

f) 15 days-2

g) 24 hours-1

h) 2 days-3

i) 4 days-4

j) Don't know-5

15. For how many hours before blood donation should a person avoid alcohol intake?

f) 6 hours-2

g) 2 hours-3

h) 24 – 48 hours-1

i) 15 hours-4

j) Don't know-5

16. Do you know the place to donate blood?

f) Blood bank and blood donation campaigns-1

g) OPD-2

h) ICU-3

i) Wards-4

j) Don't know-5

17. Can a menstruating girl donate blood?

d) Yes-2

e) No-1

- f) Don't know-3
18. Can a person donate blood after vaccination?
- d) Yes-2
- e) No-1
- f) Don't know-3
19. Which of the following patients require blood regularly?
- f) Cancer-2
- g) Bone marrow failure-3
- h) Thalassemia-4
- i) All of the above-1
- j) Don't know-5
20. Is it mandatory to obtain consent before blood donation?
- d) Yes-1
- e) No-2
- f) Don't know-3
21. Can a person donate blood on an empty stomach?
- d) Yes-2
- e) No-1
- f) Don't know-3
22. Which of the following are contraindications of blood donation?
- g) Sore throat-2
- h) If a person recently had tattoo or body piercing within 6 months-3
- i) Common cold-4
- j) Fever on the day of blood donation-5
- k) All of the above-1
- l) Don't know-6

23. Can a person who has been treated for Rabies/ Hepatitis B in the past one year donate blood?

- d) Yes-2
- e) No-1
- f) Don't know-3

24. Can a person treated for malaria in the past 3 months donate blood?

- d) Yes-2
- e) No-1
- f) Don't know-3

25. Can pregnant/lactating women donate blood?

- d) Yes-2
- e) No-1
- f) Don't know-3

26. Can a hypertensive and diabetic patient donate blood?

- d) Yes-2
- e) No-1
- f) Don't know-3

27. Can a person with heart disease donate blood?

- d) Yes-2
- e) No-1
- f) Don't know-3

28. Does an average blood donation process last for 20 minutes?

- d) Yes-1
- e) No-2
- f) Don't know-3

29. Which is the best source for blood donation?

- e) Voluntary donation-1
- f) Replacement donation-2
- g) Paid professional donation-3
- h) Don't know-4

30. Do you know the benefits of donating blood?

- d) Yes-1
- e) No-2
- f) Don't know-3

3. ATTITUDE TOWARDS VOLUNTARY BLOOD DONATION

1. Can blood donation make a person weak?

- d) Yes-1
- e) No-3
- f) Don't know-2

2. Can blood donation lead to anaemia?

- d) Yes-1
- e) No-3
- f) Don't know-2

3. Can blood donation lower immunity?

- d) Yes-1
- e) No-3
- f) Don't know-2

4. Should blood be donated only to family members, relatives and friends?

- d) Yes-1
- e) No-3
- f) Don't know-2

5. Should women not donate blood?

- d) Yes-1
- e) No-3
- f) Don't know-2

6. Is blood donation a noble work?

- d) Yes-3
- e) No-1
- f) Don't know-2

7. Does blood donation lead to cancer?

- d) Yes-1
- e) No-3
- f) Don't know-2

8. Is blood donation harmful to health?

- d) Yes-1
- e) No-3
- f) Don't know-2

9. Can a person be infected by donating blood?

- d) Yes-1
- e) No-3
- f) Don't know-2

10. Is blood donation painful?

- d) Yes-1
- e) No-3
- f) Don't know-2

11. Would you donate blood if you are paid for it?

- d) Yes-1

e) No-3

f) Don't know-2

12. Would you like to donate blood to strangers who are in need?

d) Yes-3

e) No-1

f) Don't know-2

13. Does blood donation cause temporary weakness/ fainting?

d) Yes-3

e) No-1

f) Don't know-2

14. Do you feel that too much blood will be collected during the blood donation process?

d) Yes-1

e) No-3

f) Don't know-2

15. Do you feel that the donated blood will be misused by the blood bank?

d) Yes-1

e) No-3

f) Don't know-2

4. PRACTICES TOWARDS VOLUNTARY BLOOD DONATION

1. Have you ever donated blood?

c) Yes-1

d) No-2

2. If you have ever donated blood in the past, how many times have you donated?

c) Once-1

d) More than once-2

3. If you have ever donated blood in the past, what were your reasons for donation?
- m) Blood donation is a moral responsibility-1
 - n) Blood donation saves lives-2
 - o) Best way to donate blood is voluntary and non-remunerated-3
 - p) Blood donation is good for one's own health-4
 - q) It is a personal choice-5
 - r) It renews my blood-6
 - s) In case of emergencies-7
 - t) During blood donation campaigns-8
 - u) If the process of blood donation takes less time-9
 - v) I will donate blood if I am given a reward for it-10
 - w) I will donate blood if I get a certificate for it-11
 - x) Others-12, specify- Help others-13,
- It's a good will work,that's why everyone should donate-14
- My birthday purpose-15
- In college-16
- Donated to the family member-17
4. If you have not donated blood in the past, what are the reasons for not donating blood?
- l) Fear related to needle pricks-1
 - m) I feel I am medically unfit to donate blood-2
 - n) No one has ever asked me to donate blood-3
 - o) Parents do not allow-4
 - p) No information about where, when and how to donate blood-5
 - q) Fear of knowing my status-6
 - r) I am not aware of blood donation-7

- s) There are side effects of donating blood-8
- t) I may need to donate blood to my family, relatives and friends in the future-9
- u) Lack of opportunity-10
- v) Others-11, specify_____

I dont have blood-12

Don't know blood group-13

Never got chance to donate-14

For age limit-15

Due to less weight-16

My choice-17

Due to low heamoglobin-18

I was not feeling well-19

5. If you have donated blood in the past, how was your experience?

- c) Good-1
- d) Bad-2

6. Did you feel happy with the safety measures taken by the medical attendant during the

blood donation process?

- c) Yes-1
- d) No-2

7. Did the medical attendants treat you well post blood donation?

- c) Yes-1
- d) No-2

8. Would be interested to donate blood if an opportunity will be given to you?

- d) Yes-3
- e) No-1

f) Don't know-2

9. Would you like to donate blood regularly in the future?

d) Yes-3

e) No-1

f) Don't know-2

10. Would you encourage your family, relatives and friends to donate blood?

d) Yes-3

e) No-1

f) Don't know-2

