

## Awareness about Blood Donation among Engineering Students

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### ABSTRACT

**Background** - Understanding the knowledge, attitude and practices about blood donation among engineering students is essential since they are expected to set a message, regarding the need for voluntary blood donation to the general population.

**Objectives** - To assess the Knowledge, Attitude and Practice regarding blood donation among engineering students.

**Methodology** - A cross sectional descriptive study was done among 500 students studying in a Engineering college during the month of August 2016. A pre tested and semi structured questionnaire was used. Chi square test and Fisher's exact test were used for analysis.

**Results** - The results revealed that students were well aware of the minimum age limit for blood donation (82 percent), minimum weight of blood donation (69.6 percent) & recommended type of blood donation (84 percent). However, the maximum age limit (26 percent) & minimum haemoglobin (26.6 percent) were areas of poor knowledge among the students. Only 20.8 percent of the students had ever donated blood. The reasons attributed by those who had not donated blood were fear (79.6 percent). Reasons for donation and minimum age response were found to be statistically significant among males and females

**Conclusion** - They have to be motivated in the right path to promote blood donation practices since they are a potential source of voluntary donors.

**Keywords:** Blood donation, awareness, Blood donor.

### INTRODUCTION

Blood and blood products are a unique and precious resource because they can be obtained only from individuals who donate blood or its components. About 92 million blood donations are being done annually throughout the world. <sup>[1]</sup> WHO estimates that blood donation by 1% of the population is generally the minimum needed to meet a nation's most basic requirements for blood. <sup>[2]</sup> Safe blood is a necessity for

improving health care and to prevent the transmission of infectious disease. Developing countries still have issues regarding the safety and quality of blood and blood products used for transfusion. <sup>[3]</sup> Government of India has adopted the National Blood Policy (NBP) in April 2002, which aims to develop a nation-wide system to ensure an adequate and safe blood supply. Voluntary blood donation can be increased with an effective donor education,

motivation and recruitment strategy. National Blood policy in India has been framed with the objective of ensuring easily accessible and adequate supply of safe and quality blood and blood components collected from a voluntary blood donor in well-equipped settings, which are free from transfusion transmitted infections. [4] In India average 12 million units of blood is needed out of which only 9 million are collected, remaining 3 million unit of blood is in shortage. Among 9 million units of blood, 70% is from voluntary blood donors and remaining 30% are replacement blood donors. Another alternative is paid donors who are at high chance of spreading infections. [5,6] The need for blood is constantly increasing in the world. Total population of India is 133 billion people and is a country where more than one fifth of the population is youth; deficiency in voluntary donors cannot be cited as an acceptable reason for not saving lives of people. One of the potential sources that can be used for blood donation is the fit students from educational institutions across India. In order to use these groups of people it is important to know their knowledge and attitude level regarding blood donation.

### Objectives

1. To estimate the Knowledge, Attitude and Practice about blood donation among students in engineering college
2. To determine the association between factors associated with blood donation among study population.

### METHODOLOGY

A cross sectional study was carried out in TRP Engineering college, Irungalur, Trichy District, Tamil Nadu during the period of August- September 2016. Institutional Ethical committee approval was taken prior to the study. Permission was obtained from the Principal of the college. Consecutive sampling was followed. After establishing rapport with the study subject,

the purpose, procedure, benefits, risks and confidentiality of the study were explained. Informed written consent from the study subject was taken before the questionnaire was administered.

**The interview schedule:** The study population was explained about the details of questionnaire and nature of the questions. Informed consent was obtained from the study population and the questionnaire was given. The study population was given time to fill the questionnaire. After filling the questionnaire, the papers were collected and each question was explained to the study population with appropriate answers. We tried our best to educate and counsel them regarding blood donation and eligibility and restricting conditions for blood donation. We tried to explain about human physiology, the storage of blood in the body and the way the circulating volume is restored after donation. We had also arranged a lecture by faculty member to promote voluntary blood donation and to address the doubts of the people. The Interview schedule consists of the following parameters.

**a. Socio-demographic details:** Name, Age, Gender, Year of the course.

**b. Knowledge about Blood Donation:** Eligibility criteria for blood donation, Minimum Age (>18yrs), Minimum Weight (>45kg), Minimum Haemoglobin level (>12g/dl), Maximum Age (60yrs) and Frequency (once in 3 months) were assessed.

The data was coded and entered in Microsoft Excel and analyzed using SPSS version 16 for proportions, frequencies and association. Frequencies, Chi-Square and Fischer's exact test were used to analyse data as appropriate. We considered p value as significant when p value is less than 0.05(two tailed).

### RESULTS

#### Awareness of blood donation

Out of total study population of 500, 394 (78.8%) were males and 106 (21.2%) were females.

The following table 1 represents the gender wise distribution of the Awareness about Blood Donation

(Table No.1) Awareness among Students regarding facts on Blood Donation (N=500)

Questions (Answers)	Students answered correctly			Table Value	P-value
	Males n=394	Females n=106	Total (%)		
Minimum age(18years)	315	95	410(82)	5.295	0.0214*
Minimum weight (45kg)	277	71	348(69.6)	0.436	0.5090
Frequency of donation(once in 3 months)	220	48	268(53.6)	3.741	0.0531
Minimum Hb level (12g/dl)	105	28	133(26.6)	0.002	0.9613
Maximum age(65 years)	106	28	134(26.8)	0.010	0.9197
Fear (yes)	71	31	102(20.4)	6.481	0.0109*
Recommended type of donation(voluntary)	318	92	420(84)	2.093	0.1480
Can an alcoholic donate blood (yes)	53	11	64(12.8)	0.707	0.4003

\*- significant p value (p<0.05)

69.6% answered correctly about minimum weight that can donate blood. However, they were found to be less aware of other facts of blood donation such as the maximum age limit (26.8%), minimum haemoglobin (26.6%) and whether an alcoholic can donate blood (12.8%). With regard to other questions 46.4% knew how many days after alcohol consumption blood can be donated. In the study group 104(20.8%) of the students had donated blood (Table 2).

Females (95[89.6%] out of 106) had known about the minimum age for blood donation than males (315[79.9%] out of 394). This difference was statistically significant (p value 0.0214).Female (31[29.2%] out of 106) had fear for blood donation than male (71[18%] out of 394).

This difference was statistically significant with p value of 0.0109.

Majority of students (84%) knew that voluntary non remunerated type of donation was the acceptable means of blood donation. Only 39% of the students knew the contraindications of blood donation. When it came to the maximum age limit only 26.8% answered correctly. The lowest and very poor correct answer was evoked when asked about whether alcoholic can donate blood. Only 12.8% knew that the alcoholic can donate blood.

**Practice of blood donation:**

The following table 2 represents the gender wise distribution of the Practice of Blood Donation. Males (102[25.88%] out of 394) have donated blood than Females (2[1.88%] out of 106). This difference was statistically significant with p value <0.001.

(Table No.2) Gender and blood donation practice

Blood donation practices	Males	Females	Total (%)	P<0.001
Ever donated blood	102	2	104(20.8)	
Not donated blood	292	104	396(79.2)	
Total	394	106	500(100)	

Fisher's Test: P<0.001; Significant

**DISCUSSION**

In this study 82% of the respondents had knowledge on the minimum age limit for blood donation. This result is comparable with studies done in Maharashtra, Chennai, Kerala, Uttar Pradesh were knowledge of minimum age limit for blood donation were 92%, 70%, 85% and 90% respectively. [7-10] In our study, only 26.6% knew about the minimum

haemoglobin level for donating blood. This result is lesser compared to study done in Chennai and Kerala where it is 41% and 57% respectively. [8,9] This may be due to the fact that the study populations were in the background of engineering which leads to reduction of their awareness.

In the issue of minimum weight for donation of blood we got correct response of 69.6%.This result was almost similar to

studies conducted in Maharashtra and Kerala. There were also studies which showed a reduced response. [7-11] This difference in opinion can be attributed to the fact that the response may be just a supposition from the participants.

In our study 53% had the knowledge regarding the frequency of blood donation that is once in 3 months. This result is comparable with other studies also. [9,10] On analysing the practices of the engineering students regarding blood donation it was seen that only 20.8% of the students had donated blood. This response is similar to many studies done across India. [7,8,11,12] The proportion of voluntary donation (20.8%) in the present study was lower than the national average of 61%. [13]

The students attributed their reasons for non donation as medical, commonly underweight and anaemia and the remaining was out of fear (20.4%) or non specified reasons. Many studies showed that fear were one of the primary reason for not donating blood. [14,15] Another study among health science students from south India only 6.3% had fear for blood donation. [16] The reason for increased fear attributes in our study can be contributed to their non medical course.

In our study gender wise proportion of blood donation in boys were 102(98.07%) and females were 2(1.93%) among the persons who had donated blood. This is similar to study done in Uttarakhand where majority were males. [17] This gender difference in blood donation can be due to lowered haemoglobin or weight criteria among women accordingly and increased frequency of temporary rejection from receiver part make them reluctant to return back.

### **Recommendations**

As a Medical College is nearby to the institute of study population, in order to improve awareness among the study population many initiatives such as World's Blood donor Day program can be organized by the group of doctors so that many basic

knowledge about blood donation can be clarified among the students and they can further contribute for blood donation. Many blood donation camps can be organized by blood bank team so that many lives can be saved. Counselling camps can be conducted especially for the female students (underweight and fear are the major reasons for very less donation)

### **CONCLUSION**

Educational Institution across India houses many potential blood donors in the form of young and healthy students which can meet the safe blood requirements of our country. They should lead from the front to donate blood voluntarily and take all necessary steps to encourage participating in blood donation among entire student community. Anaemia, underweight and fear were identified as the medical causes for non donation of blood. This potential donor population can be encouraged in the right ways to promote blood donation practices through effective, informative classes and discussions. It was concluded that the awareness about blood donation among the engineering students needs to be improved and also they should be motivated for voluntary blood donation.

**Source of support:** Nil

**Conflict of interest:** Nil

**Ethical Clearance:**

Obtained from Institutional Ethical Committee (IEC) in Chennai Medical College Hospital and Research Centre.

### **ACKNOWLEDGEMENTS**

We thank TRP Engineering College for their cooperation throughout the study.

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How to cite this article: Bosco RJ, Rock B, George N et al. Awareness about blood donation among engineering students. *Int J Health Sci Res*. 2018; 8(1):15-19.

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