

Knowledge and Practice of Blood donation among Students in a Medical College in Kolkata

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Abstract:

Background: Blood transfusion during surgery, in pregnancy related complication and in accident victim is a life saving measure. Adequate and reliable supply of blood can be ensured by establishing a strong base of voluntary unpaid young donors who can donate blood on repeated occasion Present study was done to ascertain the knowledge and practice of the students in a medical college of Kolkata. **Method:** Data were collected by administering a structured questionnaire among students of the medical college. **Results** More students (79.25%) knew the Minimum age for blood donation compared to maximum age (30.37%). About three fourth (72.59%) students had knowledge for minimum hemoglobin level for blood donation, but only one third students knew the minimum weight for blood donation and volume of blood collected in each donation. Minimum gap between two successive blood donations was known to 54.81% students. Students had fair knowledge about transmission of HIV and hepatitis B through blood transfusion. They had fair knowledge about non eligibility criteria of blood donation. Though 31.85% actually donate blood, 58.51% expressed desire for donating blood in future. Common reasons for not donating blood were concern about medical fitness (42.39%), fear of pain (22.22%), and concern about safety (22.22%). **Conclusion:** Students have good knowledge about eligibility and non eligibility criteria of blood donation. Only one third have donated blood in the past, but majority expressed desire to donate blood in future.

Key words: Blood donation, medical student, knowledge, practice

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I. Introduction

Blood transfusion is a life saving procedure. Blood and blood products are used for varied indication. It is used during surgery, in pregnancy related complication and in accident victim as an emergency procedure. Blood collected from donors are the source of this valuable life saving products. There are 3 types of blood donors-voluntary unpaid donor, family/replacement donor, and paid donor.¹ Blood collected from paid donors can be source of infection to the recipient. Various infections like HIV, hepatitis B, Hepatitis C, Syphilis, malaria can spread through blood transfusion.² In 62 countries, national blood supplies are based on 100% or almost 100% (more than 99.9%) voluntary unpaid blood donations and in forty countries less than 25% blood are collected from voluntary unpaid donors. Blood collection per 1000persons is higher in high income countries (36.5) compared to middle-income countries (11.6) and low-income countries (2.8).³

First blood bank in India was established in Kolkata at 1945.⁴ But, blood is not adequate for the demand in India. During January 2015 to December 2015, the annual blood collection from all the blood banks that reported was 11,645,791 units of which 71.9% (8,378,692) units were through voluntary blood donations and the remaining was from replacement donations. There is a huge disparity in the collection of blood between states. Collection was highest per 100 people in Chandigarh (8.5). West Bengal (1.2) was just above the all India rate of 1 percent. Bihar state collected only 0.2 units of blood per 100 population followed by Arunachal Pradesh (0.4), Meghalaya (0.5), Nagaland (0.5).⁵ To ensure adequate and reliable supply of blood it is essential to have a strong base of voluntary unpaid young donors who can donate blood on repeated occasion. Medical students are the future leader of the health care team. In their future life they have to motivate the community to donate blood. Young age is the ideal period to inculcate the good habit. If they have good knowledge about blood donation and positive attitude they will donate blood and act as role model to the community.

Large proportion of college and university students in India and abroad did not have correct Knowledge about different aspect of blood donation. Their attitude towards blood donation is not always positive and practice was also not encouraging.⁶⁻⁸ In this background the present study was conducted with the objective to ascertain the knowledge and practice of the students of a medical College in Kolkata.

II. Materials and methods

Present study was conducted among Undergraduate medical students of R G Kar medical College, Kolkata during March –April, 2017. R G Kar Medical College is a government medical college, established in 1916. Students of the fourth semester were included in the study. All the students available during the data collection period were included. Total 135 students participated in the study. The students were approached and purpose of the study was explained to them. Pre tested structured questionnaire was used for data collection. Questionnaires were handed over to the students and after completion it was collected. Data were entered into Microsoft excel spreadsheet and it was analyzed. Frequency and percentages were calculated.

III. Results

Total 135 students participated in the study. Among them 77.77% were boys and 22.22 were girls. Age of the students ranges from 19 to 22 years. Majority (91.85%) were Hindu, others were Muslim, Christian and Jain. Majority were from urban area (83.70%), More than half (60%) were staying in college hostel or as paying guest, rest were day scholar. Overwhelming majority (89.6%) of the students were from nuclear family. Parents of 14.07% were health care workers.

Knowledge of participants: Regarding eligibility of blood donation, many students did not have correct knowledge. Majority of students (79.25%) knew about the minimum age for blood donation, and the minimum hemoglobin level required (72.59%). Maximum age for blood donation was known to only 30.37% students. Minimum body weight for donating blood and volume of blood collected in each donation was known to 31.85% students. More than half (54.81%) knew the minimum gap between two successive blood donation. Almost all (93.33%) wrongly believe that there is a risk of infection to the person who is donating blood. Diseases that can be transmitted through blood transfusion were known to varying proportion to the students. Large majority of student (93.33%) knew that HIV can be transmitted through blood transfusion. Percentages for Hepatitis B, Hepatitis C, Syphilis and Malaria were 73.33, 41.48, 32.59 and 37.04 respectively.

Table 1. Knowledge of students about blood donation (n=135)

Parameter	Correct knowledge	
	Number	Percentages
Minimum age for blood donation	107	79.25
Maximum age for blood donation.	41	30.37
Minimum weight for blood donation	43	31.85
Minimum Hemoglobin Level	98	72.59
Volume of blood collected in each donation	42	31.34
Minimum gap between two successive blood donation	74	54.81
Contracting infection during blood donation	126	93.33
Diseases transmitted through blood transfusion		
HIV	126	93.33
Hepatitis B	99	73.33
Hepatitis C	56	41.48
Syphilis	44	32.59
Malaria	50	37.04

Majority (94.81 %) knew that blood cannot be donated during fever, while many (63.70%) knew that blood should not be donated by hypertensive patients. Almost all the students knew that blood cannot be donated by a person taking medicine for chronic diseases and persons with chronic alcoholism. Overwhelming majority had correct knowledge regarding blood donation during pregnancy and menstruation.

Practices: More than half (52.59%) had the experience of attending any blood transfusion camp, but only (31.85%) have actually donated blood. Only 17.77% students donated blood once, 11.85% donated for twice and 2.22 % donated for more than two times. Among donors 90.69% donated blood as service to the society, 4.65 % donated as relative or friend needed blood and another 4.65% donated for gift. Reasons for not donating blood were concern about medical fitness (42.39%), fear of pain (22.22%), fear of contracting infection (22.22%). Other reasons were never asked to donate (14.13%), never thought of donating (11.95%), dissuaded by family members (5.43%).

Table 2. Knowledge of students about Non-Eligibility criteria of blood donation (n=135)

Criteria	Correct knowledge	
	Number	Percentage
Fever	128	94.81
High BP	86	63.70
Person on chronic medication	124	91.85
Chronic Alcoholism	113	83.70
During Pregnancy	126	93.33
During Menstruation	106	78.51

Though 31.85% actually donate blood, 58.51% expressed desire for donating blood in the future. More than half (52.59%) said that they need permission of their parents.

Table 3. Reasons for not donating blood (n=92)

Reasons	Number	Percentage
Medically unfit	39	42.39
Fear of pain	22	23.91
Fear of contracting infection	22	23.91
Dissuaded by family members	5	5.43
Never thought of donating	11	11.95
Never asked to donate	13	14.13
other	3	3.26

IV. Discussion

Present study conducted to ascertain the knowledge and practice among students in a medical college of Kolkata showed a mixed picture. Regarding knowledge in some question students had reasonably good knowledge, but in some areas their response was not at all encouraging. About four fifth (79.25%) of the students knew the minimum age of blood donation. Similar finding was reported by Pavanchand and Radhakumari(93.5%)⁶; Jemberu et al(62.2%)⁷. Kumari et al (86.57%)⁸, Sahoo et al (85.6%)⁹, Chopra et al(90.0%)¹⁰, Mohammed et al(29.8%)¹¹. In the present study maximum age was known to only 30.37% students, the low percentage might be due to the fact that it was not their immediate concern. Other studies^{6,9} also reported comparatively less percentage compared to the percentages for minimum age. Only about one third of the present study population knew the minimum weight to be eligible for blood donation and volume of blood donated in each donation.

In the present study higher percentage knew the name of HIV and hepatitis B as the transfusion transmissible infection compared to hepatitis C, malaria, Syphilis. Many other Studies^{8,12,15}- conducted in India and abroad also reported similar result. In a study in Ethiopia⁷ relatively small number of students knew the transfusion transmissible infections.

Majority of the Present study population has correct knowledge about non eligibility about blood donation. They knew that High fever, chronic medication, chronic alcohol consumption, high blood pressure, pregnancy were non eligibility of Blood donation. Study by Pavanchand et al⁶ had similar findings.

In this study population only (31.85%) have donated blood in the past. The age group of this study population is relatively young (19-22 years), they were eligible for donating blood only for few years. Other study from India and abroad had reported varying percentages. In a university in Saudi Arabia only 19.3% have donated before.¹², but study from Chennai¹³ among medical student reported 46%. In a study among Interns in Municipal medical college in Maharashtra 47.7% have donated blood. This high rate may be due to increased age of the study population.⁹ In a university in Ethiopia blood donation rate is higher in Health students (27.2%) compared to non health students (22.8%).¹⁴ In another study from Saudi Arabia, only 13% male and 3% female students have donated blood before.¹⁵. In a study in Rajkot¹⁶ among medical students only 24% have donated in the past. Only 13.3% are voluntary, and 10.6% were replacement donor- donated to a friend or relative in need of blood. Similar percentage (23.6%) of blood donation was reported by Nigatu and Demissie¹⁷ from Ambo University regular students in Ethiopia. But, in a study among medical, nursing and engineering students in Bhubaneswar city 55.4% have donated blood.¹⁸

In present study very few have donated blood for more than one occasion. This might be due to the fact that they became eligible for blood donation only for few years. Other studies⁸ also reported small percentage of repeat donation.

In the present study the common reason of not donating blood are concern about medical fitness(42.39%), fear of pain(23.91%),fear of contracting disease(23.91%). In other studies^{6,12} common reason were concern about fitness, parental disapproval, fear of weakness, fear of needle. In Hail university other reasons are fear of knowing the serology status, concern that donated blood may be sold/misused. In present study and study from jammu⁸ one reason was that they were never been asked for blood donation. Fear of knowing their viral status was reported as cause for not opting for blood donation in Rajkot study.¹⁶

V. Conclusion

Students have good knowledge about eligibility and non eligibility criteria of blood donation. Only one third have donated blood in the past, but majority expressed desire to donate blood in future. Health communication directed to blood donation should be organized among the students, so that misconception about blood donation can be cleared and they can come forward for donation in the future and act as role model to the community

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