ORIGINAL ARTICLE

Knowledge, Attitude and Practice toward Blood Donation among Undergraduate Medical Students of UPUMS, Saifai

Ankita Sharma[1], Peeyush Kariwala[2], Kiran K[3], Mahima[4], Kripashankar Nayak [5], Kapil Gupta[6]

[1]Senior Resident, Department of Community Medicine, Government Medical College, Shahdol, Madhya Pradesh; [2]Assistant Professor, Department of Community Medicine, Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow; [3]Medical Consultant, World Health Organization (WHO), Varanasi; [4]WHO Surveillance Medical Officer, Shamli; [5]Senior Resident, Department of Community Medicine, Hind Institute of Medical Sciences, Sitapur; [6]Lab Director, Pathcure Labs, Shahdol

Corresponding Author

Dr. Peeyush Kariwala, Assistant Professor, Department of Community Medicine, Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow
E Mail ID: peeyushkariwala@yahoo.com

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Abstract

Background: Blood saves millions of life. It cannot be manufactured artificially. Young people are the hope and future of a safe blood supply in the world. So this study was conducted to know the knowledge, awareness and practices among medical students regarding blood donation. **Aim & Objective:** To study the level of knowledge, attitude and practices about blood donation among undergraduate medical students. To educate the students about blood donation. **Settings and Design**: The present study was carried out among MBBS students of UPUMS, Saifai. A cross-sectional study was conducted on 452 medical college students. **Methods and Material**: A pretested, semi-structured questionnaire was used for collecting the necessary information after getting informed consent. **Statistical analysis used**: Descriptive statistics was used to assess the level of knowledge, attitude and practice. Chi square test was applied to examine the association between knowledge level and other independent variables. **Results**: A questionnaire based survey among 452 medical students (59.5% males & 40.4% females) regarding blood donation revealed that majority knew about age and weight criteria (57.3% & 67.9% respectively). Of all 93% were willing to donate, while 36% had donated previously; out of which 52.7% had donated more than once. There is significant association between blood donation practice with academic year and gender. **Conclusions**: The study concludes that many of the students did not have adequate knowledge on blood donation but they have positive attitude towards blood donation. There is a need for education and motivation regarding blood donation through regular CMEs, seminars and campaigns

Keywords

KAP; Blood Donation; Medical Students

Introduction

Blood is most expensive gift that anyone can give to another person- the gift of life.(1) There is no way blood can be manufactured which leaves a donation as the sole mean to get blood when needed. Every year, nearly 120 million units of blood are donated. However, this is not enough to meet the global demand.(2) According to World Health Organization

(WHO), 1% of the population is generally the minimum needed to meet the country's most essential requirements for blood.(3) In India, there is a need of about 8 million units of blood every year out of which only about one third are obtained from voluntary donors.(4) In developing countries like India, a greater percentage of population need is presumed to be not met due to various factors such as the health-seeking behaviour of the population, lack of healthcare access, lack of health infrastructure, clinicians' knowledge/skills, due to supply and demand-side factors etc.(5)

In high income countries, blood donation is most commonly used for supportive care in cardiovascular surgery, transplant surgery, massive trauma and therapy for solid and haematological malignancies. In low and middle income countries it is used more often to pregnancy related complications like anti-partum and post-partum haemorrhage, blood loss during childbirth and severe childhood anaemia.(6)

Safe blood is a critical component in improving health care and in preventing the spread of infectious diseases worldwide. Every year millions of lives are saved through blood transfusion, yet the safety and quality of blood transfusion are still the concern especially in the developing countries.(7) The World health organization recommends that the blood which is to be donated should be tested for some important infections like HIV, Hepatitis B, Hepatitis C, Syphilis, Malaria as these infections can be transmitted by blood donation to the recipients.(8)

Since most of the component of blood used for transfusion have a short shelf life, (red blood cells the most frequently used being 35-42 days at a refrigerated temperature and 5 days for platelets) maintaining a constant supply is needed to help ensure that hospitals have access to adequate blood.(9) The ability to transfuse blood and its components represents one of the great advances in modern medicine.(10)

It is expected that medical students have a better knowledge than the general population about blood donation and can become a future source of regular voluntary blood donors to meet the safe blood requirements. (11,12) They will also later become potential health educators and can play a pivotal role in motivating the general population to regularly practise voluntary blood donation.(13) Therefore, this study was conducted with the aim to assess the knowledge, attitude, and blood donation practices of these students and motivate them toward becoming regular, voluntary blood donors.

Aims & Objectives

1. To study the level of knowledge, attitude and practices about blood donation among undergraduate medical students.
2. To educate the students about blood donation.

Material & Methods

The present study was conducted among medical undergraduate students in Uttar Pradesh Medical University, Saifai, Etawah, Uttar Pradesh in the month of August 2016. Four hundred and fifty two student participated on voluntary basis. The necessary ethical approval was taken from ethical committee of University. After referring to previous similar studies (14, 15) regarding KAP on blood donation, a structured self-administered questionnaire was designed. The questionnaire was then reviewed and assessed by study experts. After that, the questionnaire was distributed to the participants at the end of the lecture and a signed consent was obtained from them. Since one of the objectives was to educate the participants about blood donation, hence all the students present on that day of survey, who gave consent were enrolled in the study. Later, an interactive session was organized, which gave information about voluntary blood donation and addressed all the queries of the respondents.

The questionnaire was consisted of 4 parts- first part on socio-demographic profile, second part on knowledge, third part on attitude and fourth part on practice on blood donation. Knowledge on blood donation was assessed using set of 11 questions. Out of 11 knowledge question, 3 were open ended questions. Those participants whose score were equal or more than 6 (55%) were considered to have adequate knowledge. (13,15) The data was entered into Microsoft excel and, exported and analysed using SPSS 21. Descriptive statistics was used to assess the level of knowledge, attitude and practice. Chi square test was applied to examine the association between knowledge level and other independent variables. A p value of <0.05 was taken as statistically significant.

Results

The study was conducted among 452 medical students, of whom 269 (59.5%) were male and 183 (40.5%) were female. The mean age of respondents

was 22.8 years ranging from 18 to 30 years. Hindu religion comprised of 375 (82.96%), Muslin 68 (15.04%) and others 9 (1.2%). By academic year of study, 120 (26.54%) were in their 1st year, 123 (27.21%) were in 2nd year, 122 (26.99%) were in 3rd year and 87 (19.26%) were in their final year.

Participant's knowledge about blood donation are shown in (Table-1) & (Table-2). Not a single respondent was able to respond to the questionnaire with 100% accuracy. Four hundred and fourteen (91.6%) participants were aware of their blood group. However, 38 (8.4%) were still unaware of their blood group. The most common blood group reported was B +ve 176 (38.96%), followed by O +ve 125 (27.65%) and A +ve 59 (13.05%). Least common blood group was O –ve (1%) and AB –ve (1%). The distribution of the blood groups as reported by the students is shown in (Figure-1).

Out of total, 307 (67.9%) were aware of minimum weight required to donate blood which is 45 kilograms. Two hundred and fifty-nine (57.3%) participants knew correctly the required age limit of blood donors, 245 (54.2%) participants had knowledge regarding minimum interval between 2 blood donation (3 months) and minimum Hb required to donate blood (12 gm%). The commonest blood group in India was rightly said by 262 (58%) of the participants. Only 92 (20.4%) of the participants were aware of approximate duration of whole process of blood. Statistical significant difference observed between male and female was found in knowledge regarding their own blood group and amount of blood a person can donate in a single setting.

Three hundred and sixty-three (80.3%) participants were partially aware of disease transmitted through transfusion of unscreened blood. Only 48 (10.6%) of the students were fully aware of investigations performed on blood donation and components extracted from blood. The source of information about blood donation reported by the participants were educational institute (29%), followed by workshop/ blood donation camp (24%) and TV & radio (23%) (Figure-2). The gender has no significant association with total knowledge regarding blood donation but there is significant association between 3rd year + final year student and total knowledge (Table-3).

Almost 94% (424) of the study participants are willing to donate blood in future. Fear of getting weak 214(47.3%) and lack of awareness 111 (24.6%) were the main reasons why students are reluctant to donate blood. Out of the 452 study participants, only 165 (36.5%) had donated blood so far. Of these, 132 (80%) were male and 33 (18%) were female. Eighty-seven (52.7%) students had donated blood for more than once whereas 78 (47.2%) students had donated blood only once. Out of them 150 (90.9%) had positive feeling after donating blood (Table-4).

There is significant association between blood donation practice with academic year and gender (Table-5). Students were made aware and motivated for blood donation camp which was held on 10th august 2016. Out of 452 students, 175 were registered for blood donation and 143 students donated blood in the camp.

Discussion

Safe blood saves live and improve health. There is a constant need of regular blood supply because blood can be stored for only a limited time before use. Therefore, regular blood donation by a sufficient healthy people are needed. Consequently, understanding the beliefs, level of knowledge and attitude regarding blood donation and safety is crucial.

Present study showed that 91.6% of the students knew about their own blood group. The most common blood group in the present study was B +ve (39.15%), followed by O +ve (27.65%). Same result was found by Giri el al (16) in Maharashtra and Chauhan et al (17). The participants in our study comprised of all type of blood groups, from most common to rarest. The finding suggests the need to motivate students for voluntary blood donation and get themselves registered with blood banks for emergency.

In this study, 57.3% students knew the correct age limit of donating blood. Mirza et al (14) in Pakistan reported that only 37.3% students knew correctly. Correct knowledge regarding the minimum gap between two donations was recorded as 54.2% as also observed in study done by Aslami et al (15) (45%). However another study reported 21.5% of health care workers had correct knowledge regarding gap between two blood donations. (18)

Nearly 54% of the students knew about the minimum Hb level for donating blood. Danasekaran (19) also reported as 45.9%. Knowledge regarding minimum weight required to donate blood was reported correctly by 67.9% of participants. However, Danasekaran (19) found only 34%.

Surprisingly only 20.4% of the students knew the approximate duration of whole process of blood donation. The amount of blood a person can donate in single setting also received poor rate of correct answer (22.6%).

In our study 28.53% of the study participants had adequate knowledge about the some important facts of blood donation. Aslami et al (15) reported that 35% has adequate knowledge about blood donation whereas Devi et al (20) found 33.1% of study participants had adequate knowledge. The most common source of information about blood donation reported by the students was school and college (29%) followed by workshop & blood donation camp (24%) and TV & radio (23%). Chauhan et al (17) also reported school & college as the commonest source. This highlights the fact that more emphasis should be given to institutional based awareness programs for blood donation and inclusion of this topic in school & college curriculum. Overall 3rd and final year students showed significantly higher knowledge as compared to 1st and 2nd year. Tadesse et al (21) also found increased year of study and exposure to mass media for information increases the level of knowledge.

In the present study 93.81% of the students are willing to donate blood in future. Different studies have shown a range of 75% to 95%. (13,17,22) Out of 452 medical students, 165 (36.5%) donated blood in the past which was higher than the finding of Syiemlieh et al (13) - 27.3% and Aslami et al (15) (10%). Among donors 52.7% had donated for more than one time in contrast to the study done by Aslami et al (15) which found 71% donated blood only for once. 90% of donors felt positive after donating blood. Same result was found by Aslami et al. (15)

Among non-donors (63.5%), fear of getting weak (47.3%) was the most common cause of not donating blood, followed by lack of awareness (24.6%) and fear of getting infected (11.4%). Other studies showed reasons like having no opportunity to donate blood and lack of awareness were the main reasons for reluctant to donate blood.(15,22) It raise the negative perception of blood bank services and safety of donors in the mind of students.

Our study showed a low prevalence of blood donation (36.5%), lack of adequate knowledge (28.53%) and favourable attitude towards blood donation (93.90%).

Conclusion

Only one fourth of students have adequate knowledge regarding blood donation but actual blood donation practice is relatively fair and majority of them are intended to donate blood in future. However, there are areas which lack awareness and the prevalence of blood donation among the students is still low.

Recommendation

This considers a need for ongoing, educational, and motivational activities for strengthening voluntary blood donation by the students. These lacunae can be corrected by Information, Education and Communication (IEC) activities, seminars, CMEs, etc. on blood donation and making all the students to participate in such occasions. Regular blood donation camps should be arranged to make sure that safe blood is available for all patients in need. Non-monetary incentives like appreciation certificate, health screening, promotion campaign items eg. T shirts, medals etc. may motivate students for voluntary blood donation. Government can also increase awareness through social media campaigns.

Limitation of the study

The study was conducted in students of one medical college. Hence, results which we have obtained from this study cannot be generalized to the students of all medical college or general population.

Relevance of the study

This study helps to understand the importance of creating opportunities for voluntary blood donation camp and can help the authority in making required policies.

Authors Contribution

AS, PK & KK: Study Design, Data collection & compilation, drafting of manuscript. M, KN, KG: Statistical analysis and finalization of manuscript with intellectual content.

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Tables

TABLE 1 KNOWLEDGE OF STUDY SUBJECTS REGARDING BLOOD DONATION

S. no.	Variables	Male	Female	Total	Chi square	P Value
1.	Their own blood group	239	175	414 (91.6%)	6.503	**0.011**
2.	Age limit of blood donors	149	110	259 (57.3%)	0.991	0.319
3.	Amount of blood a person can donate in a single setting	48	54	102 (22.6%)	8.480	**0.004**
4.	Approximate duration of whole process of blood donation	58	34	92 (20.4%)	0.597	0.440
5.	Minimum interval between two blood donations by a person	153	92	245 (54.2%)	1.914	0.167
6.	Minimum weight required to donate blood	179	128	307 (67.9%)	0.579	0.447
7.	Minimum Hb required to donate blood	143	102	245 (54.2%)	0.292	0.589
8.	Commonest blood group in India	146	116	262 (58%)	3.712	0.054

TABLE 2 KNOWLEDGE OF STUDY SUBJECTS ON OTHER FACTS REGARDING BLOOD DONATION

S. no.	Knowledge about (n=452)	Fully aware	Partially aware	Unaware
1.	Investigations performed on donated blood	48(10.6%)	347(76.8%)	57(12.6%)
2.	Diseases transmitted through transfusion of unscreened blood	71(15.7%)	363(80.3%)	18(4%)
3.	Components extracted from blood	48(10.6%)	338(74.8%)	66(14.6%)

TABLE 3 ASSOCIATION OF TOTAL KNOWLEDGE WITH GENDER AND ACADEMIC YEAR

Characteristics	Knowledge		Total	Chi square	P value
	Adequate	Inadequate			
Gender					
Male	69 (25.7%)	200 (74.3%)	269 (59.5%)	2.72	0.99
Female	60 (32.8%)	123 (67.2%)	183 (40.5%)		
Academic year					
3rd and final year	78 (37.3%)	131 (62.7%)	209 (46.2%)	14.69	**<0.001**
1st and 2nd year	51 (21.0%)	192 (79.9%)	243 (53.8%)		

TABLE 4 ATTITUDE AND PRACTICE OF STUDY SUBJECTS ON BLOOD DONATION

Willingness to donate blood (n=452)	
Willing	424 (93.81%)
Not willing	28 (06.19%)
Reasons of reluctance to donate blood (n=452)	
Fear of getting pricked	29 (6.4%)
Lack of awareness	111 (24.6%)
Fear of getting weak	214 (47.3%)
Inappropriate use of donated blood	11 (2.4%)
Fear of getting infected	51 (11.4%)
Ill health	36 (7.9%)
Ever donated blood (n=452)	
Yes	165 (36.5%)
No	287 (63.5%)
If yes, how many times? (n=165)	
Once	78 (47.3)
More than once	87 (52.7%)
Time elapsed from last blood donated (n=165)	
Within a year	94 (56.96%)
Over a year	71 (43.04%)
Purpose of last blood donation (n=165)	
Voluntary	136 (82.46%)
Replacement	29 (17.5%)
Feeling after blood donation (n=165)	
Positive	150 (90.9%)
Negative	5 (3.04%)
Indifference	10 (6.06%)

TABLE 5 ASSOCIATION OF BLOOD DONATION WITH GENDER, AGE AND KNOWLEDGE SCORES (N=452)

Characteristics	Have You Donated Blood Before?		Total	Chi square value	P value
	Yes	No			
Academic year				19.79	**<0.001**
3rd and final year	99 (47.4%)	110 (52.6%)	209		
1st and 2nd year	66 (27.2%)	177 (72.8%)	243		
Gender				45.26	**<0.001**
Male	132 (49.1%)	137 (50.9%)	269		

Female	33 (18%)	150 (82%)	183		
Knowledge				0.396	0.529
Adequate	50 (38.8%)	79 (61.2%)	129		
Inadequate	115 (35.6%)	208 (64.4%)	323		

Figures

FIGURE 1 BLOOD GROUP OF STUDY PARTICIPANTS

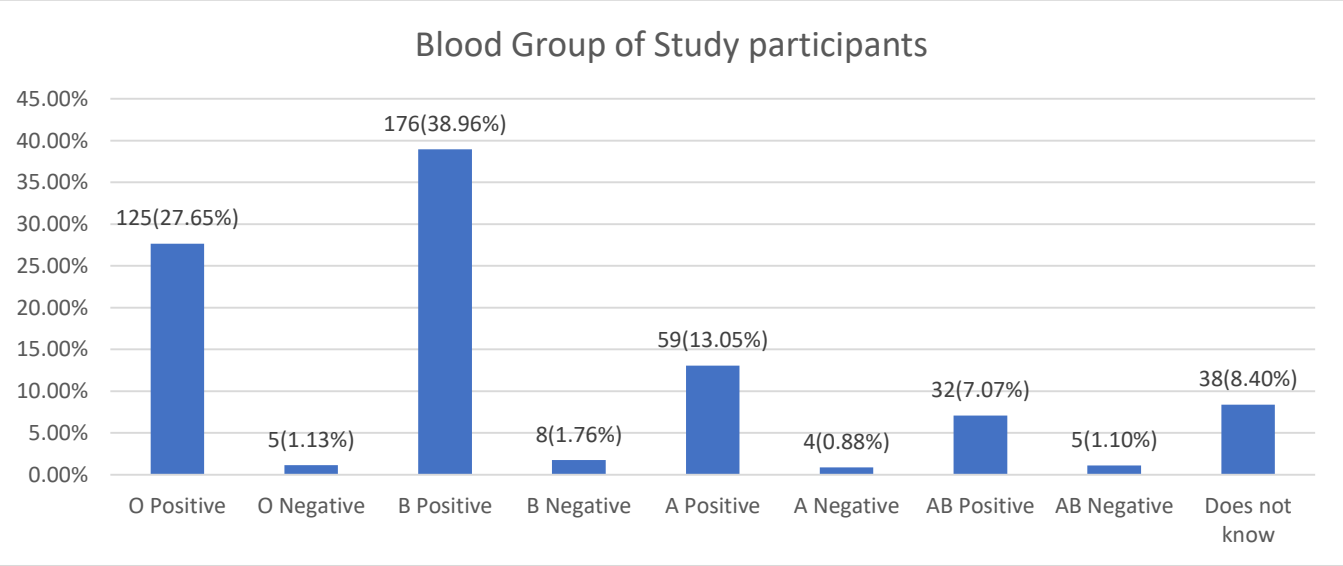

FIGURE 2 SOURCE OF KNOWLEDGE REGARDING BLOOD DONATION