EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES
http://www.ejbps.com

ISSN 2349-8870
Volume: 5
Issue: 4
853-860
Year: 2018

KNOWLEDGE, ATTITUDES, AND PRACTICES TOWARDS BLOOD DONATION AMONG BLOOD DONORS IN KOLAR, SOUTH INDIA

Dr. Subhashish Das* and Afsar Pasha C.

[1]Professor Dept. of Pathology, SDUMC, Tamaka, Kolar.
[2]Staff Nurse, SDUMC, Tamaka, Kolar.

***Corresponding Author: Dr. Subhashish Das**
Professor Dept. of Pathology, SDUMC, Tamaka, Kolar.

Article Received on 19/02/2018 **Article Revised on 10/03/2018** **Article Accepted on 31/03/2018**

ABSTRACT

Background: Blood cannot be manufactured-it can only come from generous donors. WHO estimate that blood donation by 1% of the population is generally the minimum needed to meet a nation's most basic requirements for blood. In India more than 38,000 blood donations are needed every day and a total of million blood components are transfused each year. The safest blood donors are voluntary, non-remunerated blood donors from low-risk populations. The National Blood Policy 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. Since no literature is available in our state, the present study was undertaken to understand the factors like knowledge, attitude and perception among the voluntary blood donors. To study the knowledge attitude and practice regarding blood donation among the voluntary blood donors in Kolar for a period of 2 years ranging from January 2016 to December 2017. **Study design**: Cross sectional analytical study. **Description**: A close ended, well structured validated and pretested questionnaire was used for the evaluation. 5125 participants were selected by convenient non-random sampling techniques. **Lesson learnt:** 65% of populations were first time donors with males comprising 70% of the donor population. Motivating factors identified for blood donation included post donation day off (95%) organization of blood donation camps to commemorate public functions and festivals (85%) and provision for token gifts (65%). Reported causes for not donating blood included fear or pain (95%), fear of weakness or diseases (85%) and also shortage of time (80%) and lack of motivation (77%). **Conclusion**: Correct information on Knowledge, Attitude and Practice will promote voluntary blood donation and help in better donor recruitment and retention strategies.

KEYWORD: Blood cannot be manufactured-it well structured retention strategies.

INTRODUCTION

Blood transfusion service (BTS) is a vital part of the National Health Service and there is as yet no substitute for human blood or its components. Increasing awareness of blood transmissible disease has necessitated enforcement of stricter control over the quality of blood and its products. In most of the developed countries the blood transfusion services has advanced in all facets of donor management, storage of blood, grouping and cross matching, testing of blood transmissible diseases and the rational use of blood and its products.

Blood donation is philanthropic deed in which the blood of a healthy person had been drawn voluntarily for the purpose of transfusion. The donated blood can be life-saving for individuals who have lost large amounts of blood because of serious accidents, as well as for individuals who have become severely anemic or have very low platelet counts and certain hematological disorders such as leukemia. Besides, children being treated for cancer, premature infants, and children having heart surgery need blood and platelet transfusions to survive.[1]

In spite of considerable awareness, blood transfusion services suffer from inadequate political commitment, lack of priority, fragmentation and insufficient resources. Myths and lack of information amongst communities prevent a large number of people to donate blood.[2] Human resource managing blood transfusion services are inadequate in number and lack training on recent concepts of blood safety. Several CMEs have been conducted to upgrade the knowledge of clinicians, however several such courses are needed to create awareness for use of blood components.[3]

If 2% population of any country can be motivated to donate blood regularly, blood needs can easily be met by voluntary blood donors. To motivate people to donate

blood voluntarily is a fundamental task for any transfusion services. Awareness has to be generated for regular voluntary blood donation in the communities.[1] Misconceptions, fear complex and prejudices have to be removed scientifically by rationally emphasizing that blood donation is harmless to the donor.

2. Aim of the Study

The aim of the study is to explore the knowledge, attitudes, and Practice towards blood donation among blood donors in Kolar. South India.

3. Specific Objectives

The objectives of the study are as follows:

(1) To measure the level of knowledge regarding blood donation and its importance.

(2) To find out positive and negative attitudes towards blood donation.

(3) To identify the obstacles and difficulties facing the individuals.

(4) To suggest some motivational factors that can improve the donation process in the future.

MATERIAL AND METHODS

Study Design, Study Period, and Study Population. Community based cross-sectional study was conducted in Kolar. South India from January 2016 to December 2017. The source populations were all adults who were residing in study area at least for 2 years and who were available during data collection period. Those adults who were critically ill and had mental problems were excluded from the study.

Variables. The dependent variables were knowledge, attitude, and practice of blood donation. The independent variables were socio demographic variables like sex, age, educational status, marital status, religion, and self-perceived health status.

Sample Size Determination. After reviewing the population size from the census department, Kolar (15, 36,401), we calculate the sample size. Single population proportion formula, $[n = (Z\alpha/2)2(1 - p)/d2]$, was used to calculate the sample size. Due to the lack of published information showing the knowledge, attitude, and practice of blood donation in this particular study area, we took 50% to get the maximum sample size by considering 95% confidence interval, marginal error (d) of 5%, and design effect of 2.Then, the final sample size was determined to be 5125.

Sampling Technique: Participants for this study were selected by convenient nonrandom sampling technique.

Data Collection Tool: A self-created questionnaire was used for data collection. The questionnaire was validated by Department Of Pathology (Blood Bank), Sri Devaraj Urs Medical College and Department of Community Medicine, Sri Devaraj Urs Medical College, Kolar. It included questions covering 6 areas: demographic data, knowledge "9 questions," attitude "4 questions," practice "5 questions," reasons for not donating, and motivation for donation. We assigned 2 physicians and 2 nurses to distribute the questionnaire to the participants. They explained unclear questions and helped illiterate individual to fill in the paper correctly. Questionnaire needed 10 minutes to be completed. Filled questionnaires were collected at the same time.

Study Variables. The questionnaire contains the following groups of variables:

(i) Demographic data.

(ii) Knowledge about blood donation.

(iii) Attitude towards blood donation.

(IV) Practice of donations and its effects;

(v) Motivations of blood donation.

Data Management and Analysis Plan. The Statistical Package for Social Sciences (SPSS version 22) was used for data entry and qualitative and quantitative statistical analysis. Data was entered into Microsoft excel data sheet and was analyzed using SPSS 22 version software. Categorical data was represented in the form of Frequencies and proportions. Chi-square was used as test of significance. Continuous data was represented as Median. Mann Whitney test was used as test of significance to identify the mean difference between two groups and Kruskal Wallis test was the test of significance to identify the mean difference between more than two groups. Spearman Correlation was done to find the correlation among non-parametric data. p value <0.05 was considered as statistically significant Regarding knowledge score, right answers were given score "1" while wrong answers and do not know answers were given score "0." Thus, the total knowledge score ranged between 0 and 11. While, for attitude score, the responses were scored in a way that the higher the score the more positive the attitude towards blood donation. Strongly agree was given a score "5," agree "4," neutral "3," disagree "2," and strongly disagree "1." Thus the total attitude score ranged between 0 and 6.

Ethical Considerations. The study was approved by the institutional ethical committee of Sri Devaraj Urs Medical College, Tamaka, Kolar. There was a brief introduction in the first page of questionnaire assuring the confidentiality of individual's answers.

RESULTS

Demographic Characteristics. The study included 5125 individuals attending at Sri Devaraj Urs Medical College, Tamaka, Kolar during the period of study. Their demographic characteristics are presented in Table 1.

Knowledge about Blood Donation. Almost two-thirds of participants (64.5%) knew their blood group type, while only 27.5% of them recognized the blood group type that can donate blood to any other needy individual. About one third of them (33.2%) answered correctly that the minimum age for blood donation is 16 years, while

40.1% and 43.6% of them recognized correctly the minimum weight and the minimum interval between two times for blood donation, respectively. Most of the participants (80.5%) knew the location of blood bank in their community. Almost two thirds of the participants (67%) thought that donating blood would not cause diseases or harm to the donor. Most of them (79.4%) acknowledged the blood bank screening of donated blood before transfusion and 59.9% knew that diabetic or hypertensive patients cannot donate blood.

Demographic Characteristics of the Participants and Their Knowledge about Blood Donation

1. Age. As illustrated in Table 2, the highest level of knowledge about blood donation was reported among individuals in the age group of 31–40 years (mean rank = 2720.86) compared to 2090.94 reported among those aged less than 41-50 years. This difference was statistically significant, $P = 0.001$.

2. Gender. Males had higher blood donation knowledge level rank compared to females in the study (mean rank was 2090.94 versus 2668.46), $P = 0.374$.

3. Marital Status. Unmarried individuals had higher blood donation knowledge level compared to Married individuals (mean rank was 2752.87 versus 2469.14), $P = 0.001$

4. Level of Education. It is evident from Table 2 that the knowledge about blood donation level was increasing steadily with the increase in the educational level (the mean rank for knowledge score was highest among primary school individuals and lowest among illiterate individuals (2701.80 versus 1493.27), $P < 0.001$.

5. Occupation. As demonstrated from Table 2, the highest level of knowledge about blood donation was reported among skilled employees (mean rank = 3299.57) while the lowest level was reported among unskilled employees (mean rank = 1853.91), $P < 0.001$.

Attitude towards Blood Donation

Most of the participants (82.6%) strongly agreed or agreed that blood donation is part of altruism, 71.3%strongly agreed or agreed that blood donation is a religious duty, 71.2% strongly agreed or agreed that blood donation is a national duty, and 73.9% strongly agreed or agreed that blood donation is a healthy habit.

Demographic Characteristics of the Participants and Their Attitude towards Blood Donation

1. Age. As illustrated from Table 3, the highest level of attitude score towards blood donation was reported among individuals in the age group of below 20 years (mean rank = 3232.07) while the lowest level of attitude towards blood donation was observed among those aged below 41-50 years (mean rank = 1917.09). This difference was statistically significant, $P < 0.001$.

2. Gender. Males had higher blood donation attitude score compared to females (mean rank was 2635.96 versus 2633.84), $P = 0.965$.

3. Marital Status. Married individuals had higher blood donation attitude score compared to singles (mean rank was 2568.28 versus 2730.28), $P < 0.001$.

4. Level of Education. As shown in Table 3, the highest level of attitude score blood donation was reported among Post graduate individuals (mean rank = 3216.12) while the lowest level was reported among Illiterate (mean rank = 1733.58).This difference was statistically significant, $P < 0.001$.

5. Occupation. As demonstrated from Table 3, the highest level of attitude score blood donation was reported among professional individuals (mean rank = 3600.71) while the lowest level was reported among unskilled individuals (mean rank = 1135.39).This difference was statistically significant, $P < 0.001$.

6. Practice of Blood Donation. 45.8% of the participants claimed that they have a history of blood donation.

Table 4: Association between Demographic profile and Practice Score of blood donation

1. Age. As illustrated from Table 4, the highest level of practice score towards blood donation was reported among individuals in the age group of below 21-30 years (mean rank = 2677.65) while the lowest level of attitude towards blood donation was observed among those aged below >50 years (mean rank = 2211.25). P = 0.057

2. Gender. Females had higher blood donation practice score compared to Males (mean rank was 2665.81 versus 2525.96), this difference was statistically significant, $P < 0.001$.

3. Marital Status. Married individuals had higher blood donation practice score compared to singles (mean rank was 2687.61 versus 2598.74), $P = 0.015$.

4. Level of Education. As shown in Table 4, the highest level of practice score blood donation was reported among PUC individuals (mean rank = 2772.34) while the lowest level was reported among Post Graduate Individual (mean rank = 1899.76).This difference was statistically significant, $P < 0.001$.

5. Occupation. As demonstrated from Table 4, the highest level of Practice score blood donation was reported among Unskilled workers (mean rank = 3208.68) while the lowest level was reported among professional individuals (mean rank = 1634.47).This difference was statistically significant, $P < 0.001$.

Table 5:-In the association between Demographic profile and Pervious history of Blood Donation

1. Age. More than half (58.0%) of individuals in the age group of 21–30 years compared to only 6.8 %of those aged 41-50 years had a history of blood donation. This difference was statistically significant, $P < 0.001$.

2. Gender. Males had significantly higher tendency towards donating blood compared to females (78.8% versus 21.2%), $P = 0.166$.

3. Marital Status. Married individuals had higher rate of blood donation compared to unmarried individuals (58.1% versus 41.9%), $P = 0.218$.

4. Level of Education. The history of blood donation was steadily increasing with the increase in the educational level of the participants as 57.1% of individuals with graduate education compared to 0.7% of illiterates have donated blood previously, $P < 0.001$.

5. Occupation. The majority of semiprofessional personnel (47.8 %) had donated blood compared to 8.2% of unemployed persons and 0.3% of semi-skilled worker. This difference was statistically significant, $P < 0.001$.

Table 5 demonstrates that individuals who had history of blood donation showed higher attitude towards blood donation compared to those who did not have such history.

The majority of individuals who donated blood before (95.6%) reported that they will do it again 96.3% of them described blood donation as a positive experience and they will encourage their friends to donate blood in the future.

Table 6: Detailed demographic profile and number of previous Blood Donation.

1. Level of Education: - It is evident from Table 6: shows the number of pervious blood donation among participants. The mean rank for frequency of blood donation was highest among graduate individuals and lowest among post-graduate individuals (2780.19 versus 1833.62), this difference was statistically significant, P < 0.001.

2. Marital Status: - Married individuals had higher blood donation score compared to singles (mean rank was 2741.37 versus 2560.81), P <0.001.

3. Occupation: - As demonstrated from Table 6, the highest level of number of previous blood donation was reported among student (mean rank = 2923.50) while the lowest level was reported among professional individuals (mean rank = 1594.07).This difference was statistically significant, $P < 0.001$.

Table 7:- Spearman's correlation between KAP score and no of times blood donated Showed significant correlation with regard to attitude score and practice score P<0.001.

Table 1: Socio Demographic Profile of Subjects in the study.

		Count	%
Age	< 20 years	477	9.1%
	21 to 30 years	2994	56.8%
	31 to 40 years	1431	27.2%
	41 to 50 years	360	6.8%
	> 50 years	8	0.2%
Gender	Female	1142	21.7%
	Male	4128	78.3%
Education	Illiterate	30	0.6%
	Primary	535	10.2%
	Secondary	1538	29.2%
	PUC	1402	26.6%
	Graduate	1667	31.6%
	Postgraduate	98	1.9%
Marital Status	Married	3090	58.6%
	Unmarried	2180	41.4%
Occupation	Unemployed	502	9.5%
	Home Maker	637	12.1%
	Unskilled Worker	87	1.7%
	Semi skilled Worker	23	0.4%
	Skilled Worker	718	13.6%
	Semi Professional	2370	45.0%
	Professional	87	1.7%
	Student	846	16.1%

Table 2: Association between Demographic profile and Knowledge Score.

		Knowledge Score					
		Count	Minimum	Median	Maximum	Mean Rank	P value
Age	< 20 years	477	2	7	9	2542.11	<0.001*
	21 to 30 years	2994	1	7	10	2675.85	
	31 to 40 years	1431	1	7	10	2720.86	
	41 to 50 years	360	2	7	8	2090.94	
	> 50 years	8	6	7	8	2339.75	
Gender	Female	1142	1	7	9	2626.38	0.374
	Male	4128	1	7	10	2668.46	
Education	Illiterate	30	6	7	7	1493.27	<0.001*
	Primary	535	5	7	10	2792.54	
	Secondary	1538	1	7	9	2619.40	
	PUC	1402	1	7	10	2701.80	
	Graduate	1667	1	7	9	2579.21	
	Postgraduate	98	3	7	8	2389.54	
Marital Status	Married	3090	1	7	10	2469.14	<0.001*
	Unmarried	2180	1	7	10	2752.87	
ccupation	Unemployed	502	4	7	9	2381.52	<0.001*
	Home Maker	637	3	7	9	2719.20	
	Unskilled Worker	87	1	7	8	1853.91	

	Semi skilled Worker	23	7	7	9	3299.57	
	Skilled Worker	718	2	7	10	2860.05	
	Semi Professional	2370	1	7	10	2612.93	
	Professional	87	6	7	8	2508.74	
	Student	846	5	7	9	2671.20	

Table 3: Association between Demographic profile and Attitude Score.

		Attitude Score					
		Count	**Minimum**	**Median**	**Maximum**	**Mean Rank**	**P value**
Age	< 20 years	477	2	5	6	3232.07	<0.001*
	21 to 30 years	2994	1	4	8	2650.97	
	31 to 40 years	1431	1	4	7	2583.14	
	41 to 50 years	360	1	3	6	1917.09	
	> 50 years	8	4	4	4	2969.50	
Gender	Female	1142	2	4	7	2635.96	0.965
	Male	4128	1	4	8	2633.84	
Education	Illiterate	30	3	3	6	1733.58	<0.001*
	Primary	535	3	4	6	2665.24	
	Secondary	1538	1	4	8	2545.08	
	PUC	1402	1	4	6	2584.41	
	Graduate	1667	2	4	7	2734.44	
	Postgraduate	98	3	5	6	3216.12	
Marital Status	Married	3090	1	4	8	2730.28	<0.001*
	Unmarried	2180	2	4	7	2568.63	
Occupation	Unemployed	502	3	4	6	2693.49	<0.001*
	Home Maker	637	2	4	7	2561.94	
	Unskilled Worker	87	1	3	5	1135.39	
	Semi skilled Worker	23	3	4	6	3182.00	
	Skilled Worker	718	2	4	8	2768.15	
	Semi Professional	2370	1	4	6	2390.64	
	Professional	87	3	5	6	3600.71	
	Student	846	2	4	6	3270.00	

Table 4: Association between Demographic profile and Practice Score.

		Practice Score					
		Count	**Minimum**	**Median**	**Maximum**	**Mean Rank**	**P value**
Age	< 20 years	477	0	3	4	2640.30	0.057
	21 to 30 years	2994	0	3	5	2677.65	
	31 to 40 years	1431	0	3	8	2564.17	
	41 to 50 years	360	1	3	4	2571.59	
	> 50 years	8	0	3	3	2211.25	
Gender	Female	1142	0	3	5	2665.81	<0.001*
	Male	4128	0	3	8	2525.96	
Education	Illiterate	30	2	3	4	2624.05	<0.001*
	Primary	535	0	3	4	2430.10	
	Secondary	1538	1	3	5	2539.97	
	PUC	1402	0	3	5	2772.34	
	Graduate	1667	0	3	8	2717.93	
	Postgraduate	98	2	2	5	1899.76	
Marital Status	Married	3090	0	3	8	2687.61	0.015*
	Unmarried	2180	0	3	5	2598.74	
Occupation	Unemployed	502	0	3	4	2859.02	<0.001*
	Home Maker	637	1	3	4	2477.25	
	Unskilled Worker	87	1	3	4	3208.68	
	Semi skilled Worker	23	2	2	4	2568.74	
	Skilled Worker	718	0	3	8	2581.99	
	Semi Professional	2370	0	3	5	2624.86	
	Professional	87	2	2	4	1634.47	
	Student	846	1	3	5	2743.06	

Table 5: Association between Demographic profile and History of Blood Donation.

		History of Blood Donation				P value
		No		Yes		
		Count	%	Count	%	
Age	< 20 years	188	11.7%	289	7.9%	<0.001*
	21 to 30 years	866	54.1%	2128	58.0%	
	31 to 40 years	434	27.1%	997	27.2%	
	41 to 50 years	110	6.9%	250	6.8%	
	> 50 years	3	0.2%	5	0.1%	
Gender	Female	366	22.9%	776	21.2%	0.166
	Male	1235	77.1%	2893	78.8%	
Education	Illiterate	5	0.3%	25	0.7%	<0.001*
	Primary	246	15.4%	289	7.9%	
	Secondary	555	34.7%	983	26.8%	
	PUC	379	23.7%	1023	27.9%	
	Graduate	354	22.1%	1313	35.8%	
	Postgraduate	62	3.9%	36	1.0%	
Marital Status	Married	959	59.9%	2131	58.1%	0.218
	Unmarried	642	40.1%	1538	41.9%	
Occupation	Unemployed	200	12.5%	302	8.2%	<0.001*
	Home Maker	293	18.3%	344	9.4%	
	Unskilled Worker	4	0.2%	83	2.3%	
	Semi skilled Worker	13	0.8%	10	0.3%	
	Skilled Worker	191	11.9%	527	14.4%	
	Semi Professional	616	38.5%	1754	47.8%	
	Professional	64	4.0%	23	0.6%	
	Student	220	13.7%	626	17.1%	

Table 6: Association between Demographic profile and No of Previous Blood Donations.

		No of Times Blood Donated					
		Count	Minimum	Median	Maximum	Mean Rank	P value
Age	< 20 years	477	0	1	5	2561.82	0.222
	21 to 30 years	2994	0	2	6	2646.49	
	31 to 40 years	1431	0	2	5	2670.64	
	41 to 50 years	360	0	1	3	2512.05	
	> 50 years	8	0	2	2	2183.63	
Gender	Female	1142	0	2	5	2646.82	0.278
	Male	4128	0	2	6	2594.57	
Education	Illiterate	30	0	2	2	2786.90	<0.001*
	Primary	535	0	1	6	2147.12	
	Secondary	1538	0	2	5	2593.71	
	PUC	1402	0	2	5	2748.48	
	Graduate	1667	0	2	5	2780.19	
	Postgraduate	98	0	0	3	1833.62	
Marital Status	Married	3090	0	2	6	2741.37	<0.001*
	Unmarried	2180	0	2	5	2560.81	
Occupation	Unemployed	502	0	2	5	2315.62	<0.001*
	Home Maker	637	0	1	5	2199.98	
	Unskilled Worker	87	0	2	3	2920.72	
	Semi skilled Worker	23	0	0	5	1986.57	
	Skilled Worker	718	0	2	5	2574.94	
	Semi Professional	2370	0	2	6	2769.91	
	Professional	87	0	0	3	1594.07	
	Student	846	0	2	5	2923.50	

Table 7: Spearman's Correlation between KAP Score and No of times blood donated.

			No of Times Blood Donated (n=5270)
Spearman's rho	Knowledge Score	Correlation Coefficient	0.016
		P value	0.249
	Attitude Score	Correlation Coefficient	0.095**
		P value	<0.001*
	Practice Score	Correlation Coefficient	0.128**
		P value	<0.001*

DISCUSSION

The goal of any transfusion service is to provide blood components that are safe for transfusion and pose minimal risk of transfusion transmissible infections. To achieve maximum safety at an acceptable cost requires multilayered risk reduction strategies involving safe blood donors, safe blood components and safe transfusion practices.[4] Obtaining safe blood donors who have a low risk of carrying transfusion transmissible infections (TTI) requires effective donor selection and screening strategies. Safe blood depends also on laboratory testing with stringent quality controls and processing. Safe transfusion practices are essential so that the correct blood is given to the correct patient and given only when it is truly needed.[5]

In a country with limited resources and where cost economics playing vital role we have to delicately strike a balance between cost, quality, manpower & infrastructural constraints as well as opening for new testing technologies prevalent in the world. In order to keep pace with the growth and safety for blood receipts we need to gear up for acceptance and incorporation latest testing facilities for our blood bank. If 2% population of any country can be motivated to donate blood regularly, blood needs can easily be met by voluntary blood donors.[6]

The approach towards blood transfusion practices should be based on "Four Principles" of autonomy, beneficence, non-malfeasance, and justice which offers a common, basic moral analytical framework and a common, basic moral language to think about ethical issues in any field of health care services.[7]

The key elements of this strategy address the issues of nationally coordinated blood transfusion services, collection of blood only from voluntary blood donors, quality testing of blood to ensure its freedom from infectious markers and rational use of blood in clinical settings. [8] Lack of knowledge amongst clinicians and non-availability of sufficient quantity of components have become part of a vicious circle. Though some orientation programmes have been conducted to upgrade the knowledge of clinicians, however, several such courses are needed to generate demand for use of blood components.[9]

As only the voluntary blood donors can ensure safe blood transfusion, they are considered to be the backbone of blood safety.[10]

Along with donor recruitment, donor loyalties should also be emphasized. Donor loyalties are more complex to measure than biological parameters. However, certain criteria's have been developed to access donor loyalties which include donor retention rates (i.e. the percentage of donors who return to donate within the next 12 months), donor satisfaction with the donation procedure, and the increase in frequency of donations after recruitment appeals, and the grievance monitoring mechanism.[11]

Discomfort and outright fear of the needles required for phlebotomy, and adverse reactions to donation remain important disincentives to donation.[12] Remediation of this is primarily a responsibility of staff training and experience, along with improved technologies. The more prosaic barriers to donation, like inconvenient timing of camps, poor customer services by blood collection staffs are repeatedly cited in the various donor motivation services. These problems are managed by making the blood donation procedure more "donor friendly", arranging for a clean, hygienic and comfortable places and by selection, training and retention of staffs who adopt a mission of social services along with donor enlightment.[13]

Given the current donor selection criteria testing and process controls, it is likely that some incentives, like distribution of T- shirts, donors felicitation programmes organizing of sociocultural events such as streets plays with the theme of voluntary blood donation and organizing academic activities like posters, essays and debate competition with the theme of voluntary blood donation.[14] Will promote blood donation.

Results of our study highlight the fact that Knowledge regarding some aspects of blood donation is insufficient among the study population. However, their attitude towards it is generally satisfactory. People in the age group of 31–50 years, males, and those of higher education and the military were more likely to donate blood while those under 20 years, females, those of lower education, and students were less likely to donate

blood. People who showed higher knowledge level of blood donation and those showing more positive attitude towards blood donation were more likely to donate blood. Most reported motivating factors for blood donation were one day off and mobile blood donation caravans in public areas (malls, plazas, and streets).

The average donation rate in developed countries is 38.1 donations/1000 population (range 4.92–68.01) and in developing countries average 2.3 (range 0.40–7.46) donations per 1000 population. The average number of blood donations per 1,000 populations is 12 times higher in high income countries than in low-income countries. An overwhelming 99 per cent of the 500,000 women who die each year during pregnancy and childbirth live in developing countries, with hemorrhage which invariably requires blood transfusion, the most common cause of maternal deaths.[15]

The healthy, active and receptive huge student populations are potential blood donors to meet safe blood requirements. There is a paucity of studies on awareness, attitude and practices among medical students on voluntary blood donation. College students, particularly from medical colleges, can be a very good source of quality blood if they are motivated and are willing to be voluntary blood donors.

It is a proven fact that voluntary non-remunerated blood donation is the safest and the most ideal way for improving the quality of blood which is collected through the blood banking services across the country. The youth from medical colleges, who are a very potential group of readily available donors, have to be encouraged to participate voluntarily in the blood donation activities. In a medical college hospital, they are very much accessible to the teaching hospitals as a part of their training program and this fact can be made use of, to include awareness sessions as a part of their regular training, right in the beginning of their course itself, so as to diffuse any doubts and misconceptions that the students may have regarding voluntary blood donation. Our study which found a lot of lack of information among the medical students validates the need for such early awareness program.

CONCLUSION

Our study highlights fact that there is need to improve wing the information, education and counseling activities among the people to improve their knowledge about blood donation. Providing more opportunities for the people to participate in blood donation. Spreading information about the time, Place of blood donation camps to motivate the people to donate blood in blood donation camps, so that voluntary non-remunerated donation will be improved.

In conclusion, the information received in this study highlights the need for appropriate health promotional campaigns for blood donation. Convenience of approach to the blood center and comfort during the process increase the chances of having a good donation experience and hence aid donor retention. Donor recruitment efforts should target groups less willing to donate and simultaneously seek to reinforce the positive behavior of willing groups converting previous donors into regular practice.

REFERENCES

1. Chodhury N, Phadke S. Transfusion transmitted diseases. Indian J Pediatr, 2001; 68: 951 8.
2. Cruz JR. Reduction of maternal mortality: the need for voluntary blood donors. Int J Gynecol Obtetr, 2007; 98: 291-3.
3. Sazama K. Transfusion medicine for the practicing pathologist / physician with responsibilities for the transfusion service. Arch Pathol Lab Med., 2007; 131: 688-9.
4. Bray TJ, Salil P, Weiss HA, Porter JD. Intervention to promote appropriate blood use in India. Transfus Med., 2002; 12: 357-66.
5. Jolly JG. Deplorable state of blood transfusion service in India.J Indian Med Assoc, 2007; 105: 491.
6. Nanu A. Blood transfusion services: organization is integral to safety. Natl Med J India, 2001; 14(4): 237-40.
7. Gillon R, Medical ethics: four principles plus attention to scope. BMJ., 1994; 309: 184-8.
8. Ganguly NK. Closing gaps to achieve the Millennium development Goals: roles a medical research council can play-the Indian experience. ICMR Bull, 2004; 34: 65.
9. Sazama K. The ethics of blood management. Vox Sang, 2007; 92(2): 95-102.
10. Islam MB. Blood transfusion services in Bangladesh. Asian J Transfus Sci., 2009; 3(2): 108-10.
11. Wake DJ, Cutting WA. Blood transfusion in developing countries: Problems, priorities and practicalities. Trop Doct, 1998; 28(1): 4-8.
12. Gibbs WN, Corcoran P. Blood safety in developing countries. Vox Sang, 1994; 67(4): 377-81.
13. Jolly JG. Deplorable state of blood transfusion services in India. J Indian Med Assoc, 2007; 105: 491.
14. Hossain SMM, Banu LA, Rahman ASMM. Transfusion Transmitted Malaria - A case Report. Bangladesh Armed Forces Med J., 2000; 27(2): 55-56.
15. World Health Organization (WHO). Blood donation fact sheet, 2009.