

Original Research Article**Knowledge, Attitude & Practices towards Voluntary Blood Donation among Medical Students in MIMS, Mandya****Chaithanya K.^a, Shivakumar S.^b**^aAssistant Professor ^bProfessor and Head, Department of Pathology, Mandya Institute of Medical Sciences [MIMS], Mandya Dist, Karnataka 571401, India.**Abstract**

Introduction: Blood transfusion saves millions of life around the world. However knowledge regarding the same in the young and healthy population is not adequate.

Aims and Objectives: To study the knowledge, attitude and practices regarding blood donation among medical students

Materials and methods: A cross sectional study conducted in MIMS, Mandya. Student's knowledge, attitude, and practice of blood donation were assessed by using pre-tested semi-structured questionnaire.

Statistical analysis was done by entering the data in Microsoft excel sheets and by calculating the means and percentages.

Results: Mean age of the participants is 19.47 years. Main source of information regarding blood donation was media 59.9%. None of the participants gave 100% correct answers. Only 68% knew minimum weight, 51.1% knew minimum duration between consecutive donations, 75.8% knew volume of blood drawn. Majority were aware that people with bleeding disorders (92.8%), hepatitis (94.5%) and sexually transmitted infections [STI's] (92.3%) should not donate blood. About 17.6% said person under influence of alcohol and 18.7% said person consuming tobacco can donate blood. About 88.5% were aware of transfusion transmitted infections. About 75.2% said voluntary donors are best donors. About 31.3% participants believed that a person might get infections by donating blood. About 98.3% said donating blood is a noble cause, 31.3% participants believed it may be harmful, 87.9% were willing to donate blood however only 21.97% had donated earlier.

Conclusion: Knowledge about the prior requisites to donate blood is fairly good. Fear of contracting infections and suffering discomforts post donation was observed. Conducting information and education activities should be encouraged to motivate them.

Keywords: Knowledge; Attitude; Practice; Voluntary Donors.

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Introduction

Each year blood transfusion saves millions of lives throughout the world. There is ever growing requirement for blood and blood products in India with the increase in

the major surgeries, chemotherapy, trauma care following increased incidents of road traffic accidents and other advanced medical services. World Health Organization [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 [1]. Studies have shown that in India there is a requirement of 10 million units of blood whereas only 7.4 million units are available with a deficit of about 2.6 million units at any point of time [2]. Blood donation can save millions of patients. With the demand of this magnitude for blood and blood products safe and quality of blood supply becomes the concern. Voluntary blood donations are the cornerstone of a safe and adequate supply of blood and blood products. However in our country there are lot of misconceptions among population regarding donation of blood like a manual laborer cannot donate blood, a woman shouldn't donate blood and so on thus decreasing the probable number of voluntary donations. WHO propose countries to focus on young people to achieve 100% non-remunerated voluntary blood donation by 2020 [3]. Thus, voluntary donation by young generation is the cornerstone of safe blood supply in a nation. Hence the present study is undertaken to understand the factors like knowledge, attitude and practices associated with voluntary blood donation among medical students who also play a role in spreading the awareness.

Aims and Objectives

To study the knowledge, attitude and practices associated with voluntary blood donation among medical students

Materials and Methods

It is a cross sectional study conducted in Mandya Institute of Medical Sciences [MIMS] Mandya. MBBS students of first, second and third phase were enrolled. Student's knowledge, attitude, and practice of blood donation and related aspects was assessed by using a pre-tested semi-structured questionnaire prepared in English language, and based on WHO guidelines and national norms for blood donation practice.

MBBS students who were willing to participate in the study were included. Students who were younger than 18 years were excluded from the study.

Statistical analysis was done by entering the data in Microsoft excel sheets and by calculating the means and percentages of the same.

Results

Out of 200 students approached 196 answered the questionnaire in that 14 were excluded from the study since they were less than 18 years, thus 182 (91%) participants were assessed. Of the 182 participants 93 (51%) were females and 89 (49%) were males with the age range

from 18 years to 26 years with mean age being 19.47 years.

All participants were aware of their blood group except one (99.45%). The main source of information regarding blood donation was media 109 (59.9%) followed by college 106 (58.2%) and awareness programmes (44.5%) [Table 1]

None of the participants gave 100% correct answers for the knowledge based questions. Only 142 (78%) participants said both male and female can donate blood whereas 18% of them said only male can donate blood. Majority of the participants i.e. 171 (93.95%) knew correct age of the donors. Only 124 (68%) were aware of minimum required weight for donation. Only 51.1% knew about the minimum duration between two consecutive donations. About 75.8% participants were aware of the volume of blood drawn during the process and 78% of the participants were aware of the duration of the procedure. About 4.4% participants didn't know whether a sole earner of the family can donate blood and 16.5% said sole earners are not supposed to donate blood. In our study 53 (29.1%) participants said menstruating female can donate blood while 3.3% of them were not aware whether they can or not. Majority of the participants i.e. 92.8% participants were aware that pregnant are not supposed to donate blood and 26.4% said lactating mothers can donate blood. Only 50% of the participants were aware that a tattooed person can donate blood, among them only 34% knew the actual duration between tattoo done and donating blood. Only 6.6% said a person can donate blood on the same day of getting tattoo. For the questions on whether donors suffering from certain ailments can donate blood following are the responses- 74.7% said diabetes mellitus patients cannot donate blood, 47.8% said hypertensive patients can donate blood, 16.5% said heart disease patients can donate blood. 82.4% said patients suffering from allergy cannot donate blood. About 4.4% participants didn't know whether patients suffering from communicable diseases can donate blood or not. Majority were aware that persons suffering from bleeding disorders (92.8%), hepatitis (94.5%) and sexually transmitted infections [STI's] (92.3%) are not supposed to donate blood. Only 61% participants were aware that person on antibiotics are not supposed to donate blood, 8.8% participants didn't know whether or not a person on steroids can donate blood. About 55.5% participants said person who has taken vaccination can donate blood on the same day. Around 17.6% said a person under influence of alcohol can donate blood and 18.7% said person consuming tobacco can donate blood. Majority of the participants i.e. Majority of the participants i.e. 88.5% were aware of the fact that disease can spread through transfusion. 84% of the participants were aware of the investigations done on the collected blood where as 16.9% had no idea of it. While 14.4% participants had no idea

about different types of blood donors, majority of them i.e. 75.2% said voluntary donors are best donors and only 2.2% of participants supported the idea of remunerated donors and 5.5% said autologous transfusion is best. However, 79.67% of them preferred replacement donation by relatives and only 13.1% of the participants preferred unrelated donors [Table 2 and 3].

About 88.5% participants said infections can spread through transfusion. About 31.3% participants believed

that a person might get infections like HIV by donating blood. Majority of them i.e. 98.3% said donating blood is a noble cause however 31.3% participants said it may be harmful for the donor. Majority of them i.e. 98.9% of them said they do encourage friends and relatives to donate blood. Around 87.9% were willing to donate blood where as 10.9% said they don't want to. However, 93.95% said they will donate blood in future if they are approached. 69.2% said they would donate to anyone in need, 14.8%

Table 1: Source of information regarding blood donation

Source [multiple responses were allowed]	No.	%
Media	109	59.9
College	106	58.2
Awareness programmes [like camps]	81	44.5
Family	68	37.4
Friends	62	34

Table 2: Knowledge regarding blood donation

No.	Particulars	Correct answer	Wrong answer	Don't know
1	Who can donate blood			
	a. Male / Female/ Both	142 (78%)	38 (20.9%)	2 (1.1%)
	b. Sole earner of the family	144 (79.1%)	30 (16.5%)	8 (4.4%)
	c. Menstruating female	123 (67.6%)	53 (29.1%)	6 (3.3%)
	d. Pregnant	169 (92.8%)	10 (5.5%)	3 (1.7%)
	e. Breast feeding mother	130 (71.4%)	48 (26.4%)	4 (2.2%)
	f. Person who has got tattoo done	91 (50%)	88 (48.3%)	3 (1.7%)
	g. Who has undergone transfusion	152 (83.5%)	13 (7.2%)	17 (9.3%)
	h. Person with Diabetes Mellitus	136 (74.7%)	38 (20.9%)	8 (4.4%)
	i. Person with Hypertension	87 (47.8%)	85 (46.7%)	10 (5.5%)
	j. Person with Heart disease	140 (76.9%)	30 (16.5%)	12 (6.6%)
	k. Person with Allergy	150 (82.4%)	26 (14.3%)	6 (3.3%)
	l. Person with communicable diseases	162 (89%)	8 (4.4%)	12 (6.6%)
	m. Bleeding disorders	169 (92.8%)	7 (3.9%)	6 (3.3%)
	n. Person with Hepatitis	172 (94.5%)	3 (1.7%)	7 (3.8%)
	o. Person with STI's	168 (92.3%)	2 (1.1%)	12 (6.6%)
	p. Person on antibiotics	111 (61%)	56 (35.2%)	7 (3.8%)
	q. Person on steroids	137 (75.3%)	29 (15.9%)	16 (8.8%)
	r. Person on vaccination	68 (37.4%)	101 (55.5%)	13 (7.1%)
	s. After consuming alcohol	139 (46.4%)	32 (47.6%)	11 (6%)
	t. After using tobacco	136 (74.7%)	34 (18.7%)	12 (6.6%)
2	Age limit for donation	171 (94%)	11 (6%)	-
3	Required weight for donation	124 (68.1%)	54 (29.7%)	4 (2.2%)
4	Volume of blood collected	138 (75.8%)	39 (21.4%)	5 (2.8%)
5	Duration of the process	142 (78%)	29 (16%)	11 (6%)
6	Minimum interval between two donations	93 (51%)	85 (46.8%)	4 (2.2%)
7	Investigations done on the donated blood	153 (84%)	9 (5%)	20 (11%)
8	Donation is preferred from?	24 (13.2%)	145 (79.7%)	13 (7.1%)
9	Can transfusion spread infection?	161 (88.5%)	11 (6%)	10 (5.5%)

Table 3: Knowledge about best type of donors

Type of donor	Number	Percentage
Voluntary	137	75.2
Autologous	10	5.5
Replacement	5	2.7
Remunerated/paid	4	2.2
Don't know	26	14.4
Total	182	100

Table 4: Attitude and Practice towards blood donation

No.	Particulars	Response	
1	What you think of blood donation	Good -179 (98.3%)	Bad -3 (1.7%)
2	Blood donation is harmful to health	Yes - 57 (31.3%)	No-125 (68.7%)
3	Can a person be infected by donating blood	Yes - 57 (31.3%)	No -125 (68.7%)
3	For whom would you prefer to donate	Anyone in need-126 (69.2%)	Relative - 29 (16%)
		Blood bank -27 (14.8%)	
4	Will you donate if you are called & reminded	Yes - 171 (94%)	No -11 (6%)
5	Do you encourage relatives and friends	Yes - 180 (98.9%)	No -2 (1.1%)
6	Will you donate in future	Yes - 159 (87.3%)	No -23 (12.7%)
7	Have you donated blood	Yes - 40 (22%)	No -142 (78%)
	How many times	Once	24 (60%)
		Twice	8 (20%)
		Thrice	4 (10%)
		More than thrice	4 (10%)

preferred to donate in blood bank and others to the relatives in need. Among 182 participants only 21.97% i.e. 40 of them had donated earlier out of which 60% of them had donated once and one person had donated 5 times. [Table 4].

Discussion

Blood donation saves millions of lives. Blood cannot be manufactured and there are no substitutes for blood and blood products; it can only come from generous donors. Donors can be voluntary donors, replacement donors, paid/remunerated donors and autologous donors. The safest blood donors are voluntary, non-remunerated blood donors from low-risk populations. The collection of blood should only be from voluntary donors (low risk population), that is one of the four components of WHO's integral strategy to promote global safety and minimize risk associated with transfusion [3].

Despite this notion family and replacement donors still provide more than 45% of the blood collected in India. Such donors are supposed to be associated with a significantly higher prevalence of transfusion-transmissible infections (TTIs) including Human Immunodeficiency Virus [HIV] infection, hepatitis B, hepatitis C, syphilis and malaria [2].

In the developing countries, the hesitation among people to donate blood is accounted to misconceptions related to fears of physical harm in the process of donating blood, fear of becoming weak, getting infected etc [4]. In a study done by Kurup et al in rural south India more than 2/3rd of the participants had negative attitude towards blood donation because they thought blood donation makes one weak and decreases the working capabilities [5].

The perceptions toward voluntary blood donation [VBD] could be influenced to a large extent by socio-

demographic variables of knowledge among general population. Major factors deterring an individual from donation are safety worries and inadequate knowledge about donor eligibility. According to WHO, 38% of the reported VBD are under the age of 25 years and WHO insists the countries to focus on young people to achieve 100% non-remunerated voluntary blood donation.

Thus, college students form a major bulk of current and potential donors and understanding the various factors contributing to knowledge, attitude, and practice of VBD among college students are important [6].

In our study the response rate from the participants was 91% which can be compared to the studies done by Devi et al [7] with 95% response rate. However in studies conducted by Aslami AN et al [8] and Mohammed FH et al [9] the response rate was 82.3% and 88.6% respectively. The mean age of the participants was 19.5 years which is similar to the studies by Aslami AN et al [8], Devi et al [7], Ahmed Z et al [10], Chopra D et al [11] and Amatya M et al [12] with mean age of the participants being 19.8 years, 21years, 20+/-1.3 years, 21.3 years and 20.46 years respectively

Female participants were more in our study with female to male ratio being 51:49 which can be compared to the studies by Devi et al [7], Aslami AN et al [8], Mohammed FH et al [9], Chopra D et al [11] and Amatya M et al [12] showing the ratio 59.8:40.2, 68.6:31.4, 52.3:47.7, 57:43, 52:48 respectively. However in a study done by Misganaw C et al [13] male participants were more than female participants with ratio being 46.4:55.6.

All participants were aware of their blood groups except one person accounting to 99.45% of awareness which can be compared to 100% awareness in a study by Amatya M et al [12] and Mohammed FH et al [9] in which the awareness about their blood group was 97.3%. However in a study done by Gaonkar et al only 74.1% [14] participants knew their blood group.

The main source of information regarding blood donation in our study was media followed by college, awareness programmes like health camps and then family and friends which is similar to the study by Chopra et al [11] in which 62% of participants came to know about blood donation by media like TV and newspapers followed by college and family and friends. In a study by Devi et al [7] the main source of information was health camps, followed by media like TV, radio and then family and friends.

In a study done by Meinia et al [15] 98% of the participants were aware of who can donate blood. In our study 78% participants said both male and female can donate blood and 92.8% were aware that pregnant are not supposed to donate blood. In a study by Mohammed et al [9] contraindication for blood donation was alcoholism (54.1%), drugs like aspirin, anticoagulants (73.6%), communicable diseases (80.4%), hepatitis (52.7%) and allergy (38.3%). In our study, participants said no for donation from donors on alcohol (46.6%), antibiotics (61%) and steroids (75.3%). They also said no for people suffering from communicable diseases (89%), hepatitis (94.5%), STI's (92.3%) and allergy (82.4%).

In our study, majority of the participants i.e. 93.9% knew about the age limit for blood donation which is comparable to the studies by Chopra et al [11], Asalami AN et al [8], Misganaw C et al [13] and Meinia et al [15] with awareness rate being 90%, 85%, 85.7% and 82% respectively. However in the studies by Gaonkar S et al [14], Devi et al [7] and Manikandan S et al [16] the awareness rate was less being 60%, 56.8% and 76.25% respectively. Only 68% of the participants knew minimum required weight of the donors which can be compared to the studies by Asلامي AN et al [8] (59%), Meinia et al [15] (51.3%), Manikandan S et al [16] (72.75%) and Mohammed FH et al [9] (58.3%).

About 75.8% of the participants were aware of the volume of blood drawn during the process in our study which can be compared to the study done by Meinia et al [15] in which 83.3% were aware of it. However knowledge about the volume of blood drawn was 14.25%, 28.9% and 54% respectively in the studies by Manikandan S et al [16], Devi S et al [7] and Asلامي AN et al [8].

In our study 78% of them knew about the time duration required for the process which is comparable to the studies by Meinia et al [15] (70.6%) and Asلامي et al [8] (64%). Knowledge about the minimum interval between two donations was 51.1% in our study which can be compared to the studies by Mohammed FH et al [9] (51.3%), Chopra et al [11] (48.9%) and Asلامي AN et al [8] (45%).

Awareness about the investigations done on the donated blood was observed in 84% of the participants where as it was 40.7%, 36.25% and 67.7% in the studies

done by Gaonkar et al [14], Manikandan S et al [16] and Misganaw C et al [13] respectively. About 88.5% said infections can spread through transfusion which can be comparable to the studies by Devi et al [7] (87.6%), Asلامي AN et al [8] (90%) and Meinia et al [15] (96%). In our study 31.3% believed that one can get infections by donating blood similar observation was seen in study done by Devi et al [10] in which 29.3% believed the same. In our study 31.3% believed blood donation is harmful for the donor which is comparable to the studies done by Misganaw C et al [13] (34%), Manikandan S et al [16] (36.4%) and 74.2% in a study by Gaonkar et al [14].

Regarding best donors, 75.2% preferred voluntary donors, 5.5% said autologous donors, 2.7% replacement donors and 2.2% said paid or remunerated donors and 14.4% were unsure which similar to the studies by Asلامي AN et al [8] in which 70% preferred voluntary donors, 7% replacement and 2.1% paid donors whereas in study by Meinia et al [15] the preference was voluntary (82.67%), replacement (12.67%), paid (1.33%) and 3.33% had no idea.

Majority of the participants i.e. 98.3% thought blood donation is a good and noble act which is comparable to the studies by Ahmed et al [10] (97%), Meinia et al [15] (94.6%) and Asلامي et al [8] (100%). When asked about their willingness to donate blood 94% said they wanted to donate which is comparable to the studies by Devi et al [8] (89.8%), Asلامي AN et al [8] (89.3%) and Misganaw C et al [13] (100%). In our study 69.2% were ready to donate to anyone in need where as it was 90% in the study done by Asلامي et al [8].

In our study 98.9% participants said they will encourage relatives and friends to donate blood which is comparable to the study by Arun et al [17] (96.67%). In our study 22% of the participants had donated blood among them 60% had done once, 20% twice, 10% thrice and 10% of them more than three times which can be compared to the donation rates in the studies by Arun et al [17] (18.17%), Chopra et al [11] (23.08%, among them 35.9% had donated more than twice), Misganaw C et al [13] (23.4%, 60% once and 40% more than once)

Conclusion

Among the participants in our study, knowledge about what are the prior requisites in a donor to donate blood is fairly good. However many of them are not aware of all contraindications for the donor. Fear of contracting infections and suffering discomforts post donation is also observed. Majority of the students intend to donate blood and believe that it's a good cause but the actual donation rate is very less. Thus conducting information and education activities like teaching programs, seminars and

spreading awareness through mass media should be encouraged in order to increase the awareness in the youth and also to motivate them. Educating medical students also has an added benefit since they play an important role in spreading awareness in the community.

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