Knowledge and attitude of blood donation among female medical students in Faisalabad

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Abstract

Objective: To assess the knowledge, practices and attitude of medical students towards blood donation.

Methods: This cross-sectional study was conducted at the University of Faisalabad, Faisalabad, Pakistan, from April to August 2016, and comprised female medical students. Multi-stage sampling technique was employed. A structured questionnaire was included as data-collection tool. Statistical analysis was done using SPSS 20.

Results: Of the 500 students, 469(93.8%) responded to the questionnaire. Of them, 419(89.3%) females had never donated blood and only 2(0.4%) were regular voluntary donors. The best source from which the participants heard about blood donation was friends 259(55.2%). When coming to reasons for not donating blood, there was significant association of many factors like fear ($p < 0.001$), the collection facility being far from the place ($p < 0.001$), not having enough time to donate ($p < 0.001$). Of the 50(10.7%) respondents who had ever donated blood, 48(96%) said the main motivator was saving lives of the people.

Conclusion: Female medical students were aware of the basic knowledge about blood donation.

Keywords: Awareness, Blood donors, Blood transfusion, Knowledge. (JPMA 68: 65; 2018)

Introduction

The most remarkable contribution that a person can make towards saving lives is blood donation as blood transfusion has been recognised as one of the eight key life-saving intervention.[1] Millions of lives can be saved each year by this simple intervention. Around 4.5 million Americans would die each year without life-saving blood transfusions.[2] In a developing country like Pakistan, more than 1.5 million bags are required in a year for blood transfusion,[3] but unfortunately the rate of blood donation is less than one per cent[4] which is insufficient to meet the requirements of a country where thalassaemia and anaemia are highly prevalent. More than 90% of this blood for transfusion is donated by the friends and relatives while around 10% by professional donors.[3]

In a developing country like ours, lack of knowledge, blood donor recruitment and retention strategy and various misconceptions have resulted in a limited number of voluntary donors. This challenge can be tackled by adopting such recruitment methods that can overcome the misconceptions and also motivate the public to donate at an early age, so that they become lifelong voluntary donors. Blood donation can be started safely from 17 years of age,[5] so it is important that the young generation can be motivated to do this harmless task. In order to motivate students, first we should be aware of the knowledge, attitude and practices towards blood donation. Such studies are important to understand various factors that affect recruitment and retention of blood donors, to know the potential reasons that restrict them from doing this simple but lifesaving task, and to know the reasons that motivate the donors to donate blood. This can further help in planning proper and creative ways to recruit regular voluntary donors. In the recent past studies have shown that rate of blood donation among medical students is more as compared to non-medical students and girls donate less as compared to boys.[6] In addition, attitude and practices, to achieve regular voluntary blood donation, can be improved by simply delivering knowledge on blood donation among college students.[7] This may be achieved by health professionals' role-modelling as well as formal education through need-based as well as altruistic 'smart' messages.[8]

The present study was designed to assess the knowledge, attitude and practices of female medical students towards blood donation and to compare the proportion of reasons for not donating blood between all five medical school batches to see whether increasing medical knowledge and exposure towards patient care changed their knowledge and attitude towards blood donation.

Subjects and Methods

This cross-sectional study was conducted at the

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University of Faisalabad, Faisalabad, Pakistan, from April 2016 to August 2016, and comprised female medical students. Multistage sampling technique was used to raise the study sample. The students enrolled in the University were identified based on various disciplines. A list of these students was collected from students' record after ethical approval from the institutional research and ethics committee. The number of students in all the five disciplines was 2,021. Of the five disciplines, medicine was selected randomly; it had 750 students. A list of these students was entered on Microsoft Excel 2016. Random numbers were generated and sorted in ascending order. The first 500 students were selected from the sorted list based on the calculated sample size. The sample size was calculated with the prevalence (p) of knowledge of blood donation of 56%,[9] error (e) of 5% and confidence interval (CI) of 95% by the formula n = NX/ (X+N-1), where X= ($Z_{\alpha/2}$)^2[p(1-p)] /e^2. (n = sample size, $Z_{\alpha/2}$ = critical value of normal distribution at $\alpha/2$, α is 0.05 and critical value is 1.96, p is the sample proportion, and N is the population size). A validated questionnaire[10] regarding knowledge, attitude, misconceptions and motivating factors regarding blood donation was administered to selected five years of medical students. In first and second years of Bachelor of Medicine, Bachelor of Surgery (MBBS), basic sciences are taught, third-year MBBS is para-clinical, and fourth and final years are clinical. Questionnaires were distributed to the participants after obtaining informed consent. Questionnaires with incomplete information were excluded. Data was analysed using SPSS 20. Percentages and proportions were calculated. Proportions of groups (five years of MBBS and response) were compared using chi-square test.

Results

Of the 500 students, 469(93.8%) responded to the questionnaire. Out of them, 161(34.3%) had awareness about correct amount of donated blood, 12(2.6%) knew about correct age, 138(29.4%) knew about correct minimum weight, 244(52%) knew about the correct duration between two successive donations and 230(49%) knew about the donated blood volume replacement. Moreover, 259(55.2 %) participants came to know about blood donation through friends. Besides, 419(89.3%) respondents had never donated blood. Of the 50(10.7%) respondents who donated blood, 41(8.7%) donated it only once, 7(1.5%) donated it twice, whereas the number of regular voluntary donors was 2(0.4%) (Table-1).

Of the donors, 13(2.8%) students were in the final year, 11(2.3%) in the fourth year, 15(3.2%) in the third year, 7(1.5%) in the second year and 4(0.8%) in the first year (Figure-1).

Furthermore, 425(90.8%) students knew their blood group, 442(94.2%) knew that donated blood is screened for acquired immune deficiency syndrome (AIDS) and hepatitis B and C before transfusion, 321(68.4%) were aware that blood can be used in cancer treatment and 401(85.5%) knew that blood can be stored for later use (Table-2).

Table-1: Awareness of blood donation.

Class	N	%
1st year MBBS	147	31.3
2nd year MBBS	101	21.5
3rd year MBBS	110	23.5
4th year MBBS	81	17.3
final year MBBS	30	6.4
Total female students	469	100
Question	**N**	**%**
Amount of blood drawn for each donation is (ml)		
<500	161	34.3
500-1000	156	33.3
Don't know	152	32.4
Correct age for blood donation is (years)		
17-35	311	66.3
17-45	146	31.1
17-65	12	2.6
Minimum weight of donor should be (kg)		
50	138	29.4
51-60	222	47.3
61-70	101	21.5
>71	8	1.7
Time period between two successive donations should be		
3 months	244	52.0
6 months	171	36.5
9 months	20	4.3
12 months	34	7.2
Duration of donated blood volume replacement in donor is		
1 day	57	12.2
1 week	135	28.8
one month	230	49.0
Never	47	10.0
Have you ever donated blood		
Once	41	8.7
Twice	7	1.5
regularly	2	.4
No	419	89.3
Source from where you heard about blood donation		
friends	259	55.2
blood bank staff	31	6.6
news paper	42	9.0
TV	118	25.2
None	19	4.1

MBBS: Bachelor of Medicine, Bachelor of Surgery.
TV: Television.

Table-2: Knowledge and attitude of female medical students towards blood donation.

Knowledge and attitude towards blood donation (n= 469)	Yes n (%)	No n (%)
You know your blood group	425 (90.8)	44 (9.2)
You know donated blood is screened for AIDS, Hepatitis B & C before transfusion	442 (94.2)	27 (5.8)
All surgical procedures require blood transfusion	164 (35)	305 (65)
Blood can be used in cancer treatment	321 (68.4)	148 (31.6)
Blood is required in emergencies	463 (98.7)	6 (1.3)
Blood can be stored for its later use	401 (85.5)	68 (14.5)
Blood can be donated while keeping a fast	79 (16.8)	390 (83.2)
A token gift/money should be given to donors	224 (47.8)	245 (52.2)
Blood should be imported from abroad	95 (20.3)	374 (79.7)
Donor has risk for contracting infection like HIV or Hepatitis B& C infection	253 (53.9)	216 (46.1)
Donation of blood leads to infertility and loss of vitality	35 (7.5)	434 (92.5)
Donation of blood leads to permanent weakness/ anaemia	51 (10.9)	418 (89.1)
Blood donation leads to fainting or death	87 (18.6)	382 (81.4)
Blood donation affects physical strength	225 (48)	244 (52)
Blood donation is a painful procedure	107 (22.8)	362 (77.2)
Blood donation is harmful to health	150 (10.7)	419 (89.3)

AIDS: Acquired immune deficiency syndrome
HIV: Human immunodeficiency virus.

Table-3: Reasons of not donating blood among the non-donors.

			Class						P-Value
			1	2	3	4	5	Total	
I have unknown fear	yes	n (%)	87 (60.8%)	48 (51.1%)	27 (51.1%)	12 (17.1%)	3 (17.6%)	177 (42.2%)	<0.001
	no	n (%)	56 (39.2%)	46 (48.9%)	68 (71.6%)	58 (82.9%)	14 (82.4%)	242 (57.8%)	
I am unaware of collection facility	yes	n (%)	103 (72.5%)	62 (66.0%)	65 (68.4%)	47 (67.1%)	8 (47.1%)	285 (68.2%)	0.28
	no	n (%)	39 (27.5%)	32 (34.0%)	30 (31.6%)	23 (32.9%)	9 (52.9%)	133 (31.8%)	
The collection facility is very far from my place	yes	n (%)	94 (66.2%)	28 (29.8%)	20 (21.1%)	13 (18.6%)	4 (23.5%)	159 (38.0%)	<0.001
	no	n (%)	48 (33.8%)	66 (70.2%)	75 (78.9%)	57 (81.4%)	13 (76.5%)	259 (62.0%)	
I don't have enough time to donate	yes	n (%)	35 (24.8%)	15 (16.0%)	54 (56.8%)	42 (60.0%)	5 (29.4%)	151 (36.2%)	<0.001
	no	n (%)	106 (75.2%)	79 (84.0%)	41 (43.2%)	28 (40.0%)	12 (70.6%)	266 (63.8%)	
I am concerned about sterilization of equipment	yes	n (%)	126 (90.0%)	75 (79.8%)	81 (85.3%)	55 (78.6%)	14 (82.4%)	351 (84.4%)	0.149
	no	n (%)	14 (10.0%)	19 (20.2%)	14 (14.7%)	15 (21.4%)	3 (17.6%)	65 (15.6%)	
No one ever asked me for blood donation	yes	n (%)	133 (93.7%)	87 (92.6%)	46 (48.4%)	32 (45.7%)	7 (41.2%)	305 (73.0%)	<0.001
	no	n (%)	9 (6.3%)	7 (7.4%)	49 (51.6%)	38 (54.3%)	10 (58.8%)	113 (27.0%)	
I never thought to donate blood	yes	n (%)	111 (78.7%)	49 (52.1%)	26 (27.4%)	22 (31.4%)	7 (41.2%)	215 (51.6%)	<0.001
	no	n (%)	30 (21.3%)	45 (47.9%)	69 (72.6%)	48 (68.6%)	10 (58.8%)	202 (48.4%)	
I do not have enough information about donation	yes	n (%)	117 (83.0%)	59 (63.4%)	26 (27.4%)	17 (24.3%)	2 (11.8%)	221 (53.1%)	<0.001
	no	n (%)	24 (17.0%)	34 (36.6%)	69 (72.6%)	53 (75.7%)	15 (88.2%)	195 (46.9%)	
I believe that there is no need for blood	yes	n (%)	13 (9.2%)	4 (4.3%)	3 (3.2%)	9 (12.9%)	0 (0.0%)	29 (7.0%)	0.05
	no	n (%)	128 (90.8%)	90 (95.7%)	91 (96.8%)	61 (87.1%)	17 (100.0%)	387 (93.0%)	
I am anxious that they would take too much blood	yes	n (%)	29 (20.6%)	21 (22.6%)	12 (12.6%)	10 (14.3%)	1 (5.9%)	73 (17.5%)	0.18
	no	n (%)	112 (79.4%)	72 (77.4%)	83 (87.4%)	60 (85.7%)	16 (94.1%)	343 (82.5%)	
I am afraid of the sight of blood	yes	n (%)	28 (19.9%)	17 (18.3%)	14 (14.7%)	13 (18.6%)	1 (5.9%)	73 (17.5%)	0.605
	no	n (%)	113 (80.1%)	76 (81.7%)	81 (85.3%)	57 (81.4%)	16 (94.1%)	343 (82.5%)	
I am afraid of the needle prick	yes	n (%)	40 (28.4%)	30 (32.3%)	23 (24.2%)	19 (27.1%)	3 (17.6%)	115 (27.6%)	0.655
	no	n (%)	101 (71.6%)	63 (67.7%)	72 (75.8%)	51 (72.9%)	14 (82.4%)	301 (72.4%)	
I am not eligible because of medical reasons	yes	n (%)	17 (12.1%)	18 (19.4%)	13 (13.7%)	11 (15.7%)	3 (17.6%)	62 (14.9%)	0.626
	no	n (%)	124 (87.9%)	75 (80.6%)	82 (86.3%)	59 (84.3%)	14 (82.4%)	354 (85.1%)	
Donation process is long and boring	yes	n (%)	19 (13.5%)	11 (11.8%)	14 (14.7%)	11 (15.7%)	2 (11.8%)	57 (13.7%)	0.956
	no	n (%)	122 (86.5%)	82 (88.2%)	81 (85.3%)	59 (84.3%)	15 (88.2%)	359 (86.3%)	

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My blood will be misused by the blood bank	yes	n (%)	21 (14.9%)	17 (18.3%)	15 (16.1%)	8 (11.8%)	3 (17.6%)	64 (15.5%)	0.845
	no	n (%)	120 (85.1%)	76 (81.7%)	78 (83.9%)	60 (88.2%)	14 (82.4%)	348 (84.5%)	
I would like to donate blood if token gift is given to me	yes	n (%)	15 (10.6%)	11 (11.8%)	10 (10.5%)	6 (8.6%)	2 (11.8%)	44 (10.6%)	0.976
	no	n (%)	126 (89.4%)	82 (88.2%)	85 (89.5%)	64 (91.4%)	15 (88.2%)	372 (89.4%)	
I will donate blood if a family, relative, or friend needs	yes	n (%)	114 (80.9%)	74 (79.6%)	84 (88.4%)	64 (91.4%)	13 (76.5%)	349 (83.9%)	0.120
	no	n (%)	27 (19.1%)	19 (20.4%)	11 (11.6%)	6 (8.6%)	4 (23.5%)	67 (16.1%)	
No specific reason	yes	n (%)	112 (79.4%)	75 (80.6%)	71 (75.5%)	43 (61.4%)	8 (47.1%)	309 (74.5%)	0.002
	no	n (%)	29 (20.6%)	18 (19.4%)	23 (24.5%)	27 (38.6%)	9 (52.9%)	106 (25.5%)	
I would donate blood if blood donation camp is arranged in the university premises	yes	n (%)	59 (41.8%)	41 (44.1%)	59 (62.1%)	53 (75.7%)	9 (52.9%)	221 (53.1%)	<0.001
	no	n (%)	82 (58.2%)	52 (55.9%)	36 (37.9%)	17 (24.3%)	8 (47.1%)	195 (46.9%)	

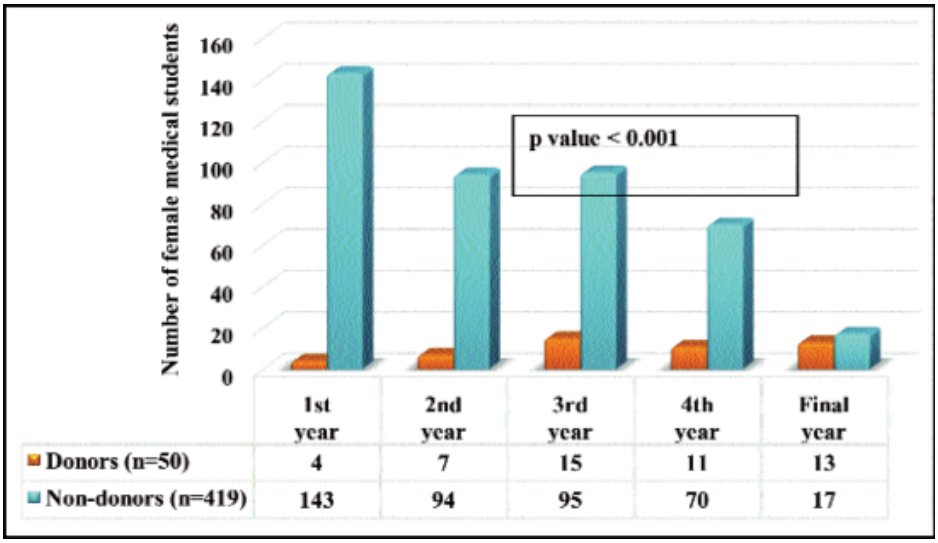
Table-4: Reasons and motivating factors for donating blood.

Motivation for donors (n = 50)	Yes n (%)	No n (%)
To help family or friend in need	34 (68)	16 (32)
Altruism	30 (60)	20 (40)
Personally asked	20 (40.8)	29 (59.2)
Money/gift	6 (12)	44 (88)
To learn about AIDS/Hepatitis B&C status	20 (40)	30 (60)
Blood donor certificate	15 (30)	35 (70)
Religious reasons	21 (42)	29 (58)
Donating blood saves life	48 (96)	2 (4)
No specific reason	12 (24)	38 (76)

AIDS: Acquired immune deficiency syndrome.

Of those who had never donated blood, the highly significant reasons (p<0.001) were: 177(42.2%) had unknown fear, 151(36.2%) had no time to donate, 305(73%) said no one ever asked them to donate blood, 215(51.6%) said they never thought of donating blood and 221(53.1%) said they did not have enough information about donation (Table-3).

Among donors, 48(96%) said donating blood saves life, whereas 6(12%) were motivated by money or gift (Table-4).



MBBS: Bachelor of Medicine, Bachelor of Surgery.

Figure: Comparison of proportions of donors and non-donors with 5 years of MBBS classes using chi-square test.

Discussion

Blood donation is an important practice in medicine. It is a life-saving procedure, especially in cases of medical emergency. No one can deny the importance of blood donation in the field of medicine and allied health sciences. Being a medical student it is very crucial to have proper information about knowledge, attitude of donors and non-donors and practices related to it as all this impacts patient's life in a very critical manner.

The current study revealed that a majority of the medical students have sufficient basic knowledge about blood donation. In our study more than 90% of the students knew their blood group and had basic knowledge on blood screening, use of blood in treatment of cancer and medical emergencies. They were also aware of the fact that blood donation is not harmful for the body.

The reason for having this basic knowledge could be that blood is an important part of medical curriculum. Our study is in line with another study carried out amongst health care providers which showed a sound knowledge about blood donation.[11] Our findings are also similar to another study conducted in which participants have good awareness about donating blood.[12] However, in contrast to our study, another study conducted in a medical college showed that the knowledge of the students

about blood donation was not up to the mark.[13] Similarly, there are other studies that show inadequate knowledge about blood donation.[7,14,15]

In our study, the best source from which the participants heard about blood donation was friends followed by television and newspaper. Our results are similar to another study conducted in Pakistan where the main source of information regarding blood donation was friends and family.[16] Similarly, another study carried out in Saudi Arabia also showed that friends followed by television are the common sources of information.[10] Researchers from India found that television is the main source of information regarding blood donation and is also important in spreading correct information and knowledge about donating blood.[17]

One interesting finding in our study was that despite having adequate knowledge about blood donation, more than 80% had never donated blood and the number of regular voluntary donors was alarmingly less. The major reasons for not donating blood were concern about the sterilisation of the equipment which was almost equally high among five years of medical students followed by unknown fear, the collection facility is far from the place, not having enough time to donate, no one ever asked me, I never thought of donating blood and I do not have enough information about donation. In line with our results, another study found that unknown fear of blood donation and needle prick (69%) are the major reasons of not donating blood. Another negative attitude towards blood donation practice was that blood banks can either misuse or might sell their blood for money purpose.[16] Similarly, in another study[18] the main reasons for not donating blood was fear of pain (55%) followed by giving no opportunity (20%) and never thought of donating blood (12.5%). In a study on college-going students the researchers found that after fear of pain another important reason for not donating blood is thinking oneself as unfit for blood donation.[17,19] All these reasons can be overcome by encouraging the students to donate blood and telling them about the importance of donating blood. This can be attained by organising different educational seminars, conferences or symposium at college level that can shed light on the significance of donating blood.

In the present study, we also explored the main motivators for donors that encouraged them to donate blood and we found a strong association of donating blood among donors in order to save lives of the people followed by helping family or friends in need and altruism. A study found that a majority of the students takes it as their moral responsibility to donate blood.[18] Researchers in another study found altruism as one of the main motivators for donating blood.[16,20] Another positive thing that we observed in our study was that many of the donors did not want any money or gift as a token for blood donation. This is similar to another study where only 0.4% of the donors want some appreciation in the form of gifts or money.[19] In contrast to our study, participants (63%) from another study approved the idea of taking gift as a replacement for donating blood.[21] Similarly, in our study 40% of the donors donated blood to know about their AIDS/hepatitis B and C status which is normally done for screening. These health incentives like blood investigations were not a motivating factor in another study by Mishra et al.[19]

Another interesting finding was that we found a significant association of students willing to donate blood if blood donation camps will be arranged in the university premises. This is an important point as universities should arrange these blood camps in order to motivate young medical students to donate blood. Students should be encouraged to make blood donating societies so whenever there is an emergency, blood donation can be asked from these societies. It seems that by this way the chances of blood donation will be increased.

Regarding misconceptions, the biggest misconception was that they have risk for contracting infection like human immunodeficiency virus (HIV) or hepatitis B and C infection followed by the misconception that blood donation can affect physical strength of the donors, whereas only few of the participants think that donation of blood leads to infertility and loss of vitality. Our results are similar to several other studies.[14,17,22]

It is important to increase the number of donors in order to cater an increase in requirement of blood. This can be done by providing adequate information about donation to potential donors. The gap between the demand and the supply of the country could be narrowed down by creating opportunities for blood donations. These opportunities can be created by conducting many blood donation camps and by making blood donating societies at college and university levels.

Conclusion

Medical students had basic knowledge about blood donation. However, they did not understand the importance of blood donation and had never been encouraged at any level for donating blood. There were also some misconceptions among the participants which can be overcome by giving lectures or conducting educational seminars on the topic.

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