

Research Article

# A Study on Knowledge, Attitude and Practice on Blood Donation among First Year Undergraduate Students

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## I N F O

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## A B S T R A C T

**Introduction:** Globally young people play a pivotal role for voluntary non remunerated blood donation. Good knowledge and positive attitude towards blood donation among young people specially those who are attached to health care delivery system not only recruit them to donate blood but also help to increase awareness in the community.

**Objective:** To determine knowledge attitude and practice of blood donation among undergraduate students.

**Materials and Methods:** A cross sectional study was conducted which included first year undergraduate students from medical, physiotherapy and audiology institutes during August-September 2016. A sample of 161 students was contacted in their classroom to give brief information about the research. A predesigned, pretested questionnaire was given to the students to collect the basic demographic details of study participants, their knowledge, attitude and practice towards voluntary blood donation. Data were presented using tables and graph after calculating percentage for different variables under study.

**Results:** There were 161 students who were included in the study, out of which 62%, 27.3% and 10.7% were M.B.B.S. students, B.P.T. and B.A.S.L.P., respectively. Among all 62.7% were having good knowledge regarding blood donation. Nearly 92.5% were ready to donate blood and around 95% replied that voluntary blood donation was the safest. Out of total students, only two students (1.2%) had donated blood once in recent past and felt discomfort after donating blood.

**Conclusion:** In spite of having good knowledge and positive attitude towards blood donation, very few students had donated blood. Attempt should be made to include the students in the blood donation camps, encourage them to willingly donate blood and propagate the information to their peer group.

**Keywords:** Attitude, Blood Donation, Knowledge, Practice, Undergraduate Students

## Introduction

Blood can save millions of lives. The only source of blood is by blood donation<sup>1</sup> and the safest of all kinds of blood donation is Voluntary Non-Remunerated Blood Donation (VNRBD).<sup>2</sup> However, recruitment of voluntary, non-remunerated blood donors poses major challenges to transfusion services throughout the world.<sup>3</sup> The blood and blood product's requirement in a country depends on the population, health care structure and prevalence of conditions requiring regular transfusions such as hemophilia, thalassemia etc.<sup>4</sup> As per the WHO, the blood requirement of 1% of a country's population is used as a ballpark estimate of its blood needs<sup>5</sup> and to meet a country's need 1-3% of the population should donate blood.<sup>6</sup> However blood requirement far outweighs its supply due to shortage of active blood donors to meet the increased demand of blood.<sup>7</sup> Every year 50% of 112 million blood donations are collected from low and middle income countries where nearly 80% of world's population lives.<sup>5</sup> In 2016-17, India collected 11.1 million units of blood meeting 85% of its 13 million units target<sup>8</sup> with short of 1.9 million units of blood.<sup>5</sup> Therefore, reliable supply of safe blood is essential requirement for every country throughout the year to meet increase demand and to fill gap between demand and supply.

Positive Attitude, selflessness, peer influence, access to health care services, media influence and knowledge regarding blood donation are the important predictors that motivate healthy individuals to donate blood regularly.<sup>9-11</sup> According to WHO, people under the age of 25 years contributes 38% of total voluntary blood donations.<sup>12</sup> Medical students who can be the potential source of safe blood as they are young, physically fit, easily accessible and well educated at their young age to recruit themselves for blood donation after reaching the legal age for it.<sup>13</sup> Correct knowledge and Positive attitude towards blood donation among medical students not only recruit them for regular blood donation but also help to motivate others to donate blood regularly. Therefore, the study was conducted to determine knowledge, attitude and practice among undergraduate students of various health professional in C. U. Shah Medical College and Hospital and motivate them to donate blood voluntarily on regular basis.

## Materials and Methods

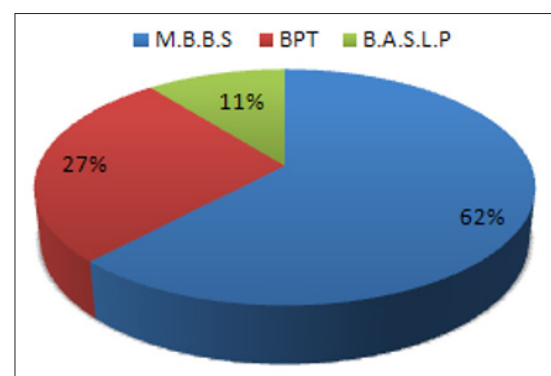
C.U. Shah Hospital campus is located in Suredranagar, Gujarat having three health professional institutes; C.U. Shah Medical College (M.B.B.S.), C.U. Shah Physiotherapy College (B.P.T.) and C.U. Shah Audiology and Speech language Pathology (B.A.S.L.P.).

A cross sectional study was conducted which included first year undergraduate students admitted during August-September 2016 from medical, physiotherapy and audiology institutes. Institutional ethics committee approval was

issued prior to the initiation of the study. Verbal Permission was taken from the heads of these institutes. All students, 100 from M.B.B.S., 58 from B.P.T. and 17 from B.A.S.L.P. were contacted during 1<sup>st</sup> week of January 2017 in classroom of their own institutes to give brief information about the research. Dates of interview were fixed and intimated to the students at that time which was decided as 2<sup>nd</sup> and 3<sup>rd</sup> week of January 2017. Nearly 14 students who were absent and did not give verbal consent were excluded. The final sample size was 161 students of them 100 from M.B.B.S., 44 from B.P.T. and 17 from B.A.S.L.P. A predesigned, pretested questionnaires prepared in English were given to the students to collect the basic demographic details of study participants, their knowledge, attitude and practice towards voluntary blood donation. The Proforma contained 12, 5 and 2 questions regarding knowledge, attitudes and practice of blood donation respectively which were validated prior to the initiation of the study. To assess the level of knowledge the students who gave right answers for 6 and more questions related to knowledge regarding blood donation were considered as having good knowledge. Data were entered with Microsoft Excel 2007. Data were then exported to SPSS version 20 for further processing. Percentages were calculated for different variables. Data were presented graphically and by using tables to describe the variables under study.

## Result

There were 161 students who were included in the study, out of which 62%, 27.3% and 10.7% were M.B.B.S. students, B.P.T. and B.A.S.L.P. respectively (Figure 1).



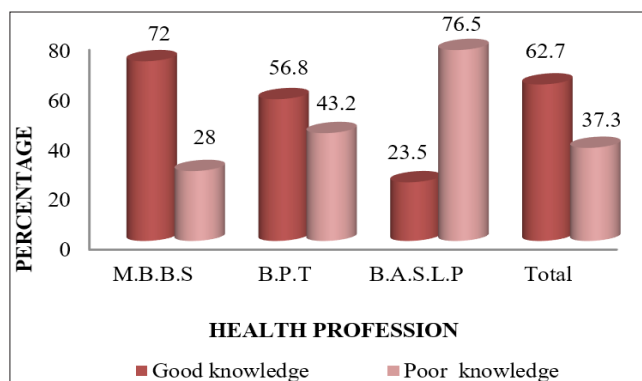
**Figure 1. Distribution of students according to their professional course (N= 161)**

Nearly three fourth of the students were of 18 years (75.2%) followed by 17 years (18.6%) and 19 years (6.2%). Females constituted 54% of total students (Table 1).

All the students were aware of their own blood groups. Among all, majority (92.5%) were aware about appropriate age for blood donation, 67.7% knew that minimum 50 kg weight was required to donate blood, 66.5% knew that blood is collected from vein, 62.1% answered correctly about

universal blood donors and 61% were aware of optimum BP level required for blood donation. More than half of total students knew that blood could be donated maximum four times in a year (57.8%) and recipients could acquire new infection through blood transfusion (52.2%). Very few students were aware about how long the blood could be preserved after donation (37.3%), amount of blood that could be collected at one time (29.2%), whether to screen blood before transfusion (24.2%), which anticoagulant is used to preserve blood (15.5%) and at which temperature blood could be preserved (12.4%). Medical students were more aware regarding the various criteria for blood donation compared to physiotherapy and audiology students (Table 2).

Among all 62.7% were having good knowledge regarding blood donation. Nearly three fourth of M.B.B.S and two fourth of B.P.T students were having good knowledge regarding blood donation (Figure 2).



**Figure 2. Level of knowledge among students regarding blood donation**

Majority of students had positive attitudes towards voluntary blood donation. Nearly 92.5% were ready to donate blood and around 95% replied that voluntary blood donation was the safest. Very few students had misconception regarding

**Table 1. Age and sex wise distribution of students (N= 161)**

S. No.	Age (years)	Departments			
		M.B.B.S (%)	B.P.T. (%)	B.A.S.L.P. (%)	Total (%)
1.	17	20 (20.0)	07 (15.9)	03 (17.6)	030 (18.6)
2.	18	75 (70.0)	33 (75.0)	13 (76.5)	121 (75.2)
3.	19	05 (05.0)	04 (09.1)	01 (05.9)	010 (6.2)
	<b>Sex</b>				
1.	Male	58 (58.0)	07 (15.9)	09 (52.9)	74 (46.0)
2.	Female	42 (42.0)	37 (84.1)	08 (47.1)	87 (54.0)
	Total	100 (100)	44 (100)	17 (100)	161 (100)

**Table 2. Knowledge regarding blood donation among students [N= 161, M.B.B.S (100), B.P.T (44), B.A.S.L.P (17)]**

S. No.	Knowledge regarding blood donation	Correct response			
		M.B.B.S (%)	B.P.T. (%)	B.A.S.L.P. (%)	Total (%)
1.	Appropriate age for blood donation	100 (100)	37 (84.1)	12 (70.6)	149 (92.5)
2.	Minimum weight for blood donation	071 (71.0)	30 (68.2)	08 (47.1)	109 (67.7)
3.	Optimum BP to donate blood	070 (70.0)	25 (56.8)	03 (17.6)	098 (60.9)
4.	Is screening test required before blood donation	020 (20.0)	19 (43.2)	00 (00.0)	039 (24.2)
5.	Site for blood collection	080 (80.0)	19 (43.2)	08 (47.1)	107 (66.5)
6.	How long the blood can be preserved?	040 (40.0)	19 (43.2)	01 (05.9)	060 (37.3)
7.	Who are the universal blood donors?	060 (60.0)	26 (59.1)	14 (82.4)	100 (62.1)
8.	Does recipient acquire infection after blood transfusion?	060 (60.0)	17 (38.6)	07 (41.2)	084 (52.2)
9.	Anticoagulant used to preserve blood.	020 (20.0)	05 (11.4)	00 (00.0)	025 (15.5)
10.	How many times blood can be donated in a year?	070 (70.0)	21 (47.7)	02 (11.8)	093 (57.8)
11.	How much volume of blood can be collected during each donation?	030 (30.0)	16 (36.4)	01 (05.9)	047 (29.2)
12.	Blood storage temperature	010 (10.0)	10 (22.7)	00 (00.0)	020 (12.4)

blood donation as only 11%, 10% and 7.5% replied that blood donation could make one weak, anaemic and reduce immunity respectively (Table 3).

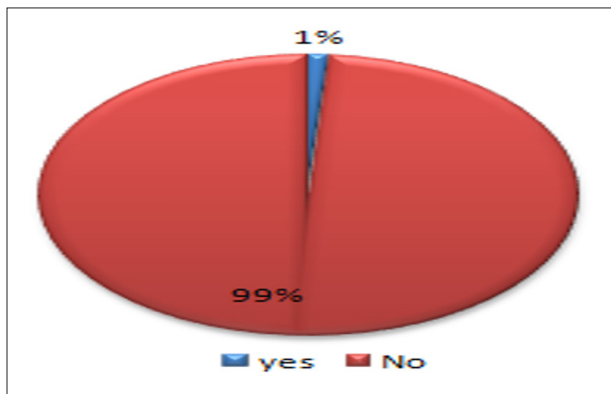
### \*VBD (Voluntary Blood Donation)

Out of total students, only two students (1.2%) had donated blood once in recent past and felt discomfort after donating blood (Figure 3).

A community based cross sectional study was conducted by Jemberu YA et al.<sup>18</sup> also found the similar result (56.5%) while studies which included non-health science students reported lower result compared to this study.<sup>16, 17</sup> The present study showed that all students knew their own blood group and almost similar finding was noted by Agravat A et al. (96%)<sup>19</sup> and Meinia S et al. (97.3%).<sup>20</sup>

**Table 3. Attitude towards blood donation among students (N = 161)**

Attitude towards blood donation	Correct response			
	M.B.B.S (%)	B.P.T. (%)	B.A.S.L.P. (%)	Total (%)
Are you willing to donate blood in future?	96 (96)	40 (90.9)	13 (76.5)	149 (92.5)
Is VBD* the best source of safe blood?	98 (98)	41 (93.2)	14 (82.3)	153 (95.1)
Can blood donation make you weak?	90 (90)	37 (84.1)	16 (94.1)	143 (88.8)
Can blood donation lead to anemia?	90 (90)	38 (86.4)	17 (100)	145 (90.1)
Can blood donation reduce your immunity?	90 (90)	42 (95.5)	17 (100)	149 (92.5)



**Figure 3. Blood donation among students (N=161)**

### Discussion

Good knowledge and positive attitude amongst young and healthy individuals from health professional motivate them to practice regular blood donation. The present study showed that medical students were more aware regarding the various criteria for blood donation compared to physiotherapy and audiology students. However nearly two fifth (43%) of all B.P.T students were knowing that screening test is required before blood donation about which only one fifth (20%) of all M.B.B.S students were aware. Knowledge among audiology students regarding various criteria for blood donation was poor compared to medical and physiotherapy students. Nearly 62.7% of all students were having good knowledge regarding blood donation. This finding is almost similar to the studies conducted by Vasisht S et al. (60.81%)<sup>14</sup> and Tadesse W et al. (54%)<sup>15</sup> while it was lower compared to Raghuvanshi B et al. (82.2%)<sup>16</sup> and Gebresilase HW et al. (79.4%).<sup>17</sup> All these studies had been conducted among health professionals.

Among all majority (92.5%) were willing to donate blood in future which includes almost all M.B.B.S. (96%) and B.P.T. (91%) students while nearly one fourth of all B.A.S.L.P (23.5%) students were not ready to donate blood. Similar finding was observed by Sahoo DP et al. (92.7%)<sup>21</sup> and Tadesse W et al. (83%)<sup>15</sup> in their studies. Almost all students replied that voluntary blood donation is the best source of safe blood (95.1%) and similar finding was observed by Tadesse W et al. (92.3%)<sup>15</sup> while it was higher than the studies conducted by Meinia S et al. (82.6%)<sup>20</sup>, Agravat A et al. (80%)<sup>19</sup> and Aslami AN et al. (70%).<sup>22</sup> In the present study few students reported that donors become weak (11%), anaemic (10%) and their immunity reduce (7.5%) after blood donation. Similar findings were observed by Meinia S et al.<sup>20</sup> in his study. The study conducted by Raghuvanshi B et al.<sup>16</sup> and Agravat A et al.<sup>19</sup> reported that nearly 58.2% and 66% of medical students had fear of weakness and fainting after blood donation.

The present study reported that only two students (1.2%) had donated blood in their recent past. In spite of having good knowledge and positive attitude towards blood donation, very few had donated blood because majority of the students knew that they all have just crossed the lower limit of age for blood donation. This observation was lower than the others.<sup>19-21</sup>

### Conclusion

Findings of the study revealed that the level of knowledge regarding various criteria of blood donation was satisfactory. However medical students fared better than the physiotherapy and students of BASLP. Only two students had donated blood so far.

Information, education and motivation need to be scaled

up. Attempt should be made to include the students in the blood donation camps, encourage them to willingly donate blood and propagate the information to their peer group. Awareness activities need to be started as early as in their high school for better impact. Also, initiatives should be taken to remove their fears regarding blood donation and encourage for blood donation.

**Conflict of Interest:** None

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## Appendix

### Proforma (About Blood Donation)

Name:	
Age:	Sex:
Department:	

1. Which is your Blood Group?: \_\_\_\_\_
2. Do you know the suitable age for Blood donation?  
**Yes/ No** (If yes then write it) \_\_\_\_\_
3. Do you know minimum weight of the donor required for Blood donation?  
**Yes/ No** (If yes then write it) \_\_\_\_\_
4. Do you know the optimum level of Blood pressure to donate blood?  
**Yes/ No** (If yes then write it) \_\_\_\_\_
5. Do you know the Screening test required before for Blood donation?  
**Yes/ No** (If yes then write it) \_\_\_\_\_
6. In Blood donation blood is collected from?  
a) Artery                                  b) Vein
7. Do you know after collection of blood how long it can be preserved?  
**Yes/ No** (If yes then write it) \_\_\_\_\_
8. Which blood group is the Universal donor? \_\_\_\_\_
9. Does infectious disease get transferred to recipient in blood donation? **Yes/ No**
10. Do you know which anticoagulant is used to preserve blood in blood bank? **Yes/ No** \_\_\_\_\_
11. Do you know many times a healthy person can donate blood in a year? **Yes/ No** \_\_\_\_\_
12. Do you know how much blood is donated in every blood donation? **Yes/ No** \_\_\_\_\_
13. Do you know at which temperature donated blood is stored? **Yes/No** \_\_\_\_\_
14. Are you willing to donate blood in future? **Yes/ No**
15. Do you think that blood donation make you weak? **Yes/ No**
16. Do you think that blood donation make an anaemic? **Yes/ No**
17. Do you think that blood donation can reduce your Immunity? **Yes/ No**
18. Do you think that VBD is the best source of blood donation? **Yes/ No**
19. Have you ever donated blood? **Yes/ No**
20. If you have donated blood, have you experienced any discomfort after blood donation? **Yes/ No**