

**ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICE (KAP) OF BLOOD DONATION AMONG MBBS STUDENTS OF A MEDICAL COLLEGE IN KOLLAM, KERALA**

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**ABSTRACT: BACKGROUND:** Blood transfusion is a very crucial component to manage patients suffering from various medical conditions. Voluntary blood donors are the need of the hour. There is a need to spread awareness among general population and students about blood donation to maintain a regular blood supply. Young medical students can serve as best example to take a lead in this noble cause. **OBJECTIVE:** To assess the Knowledge, Attitude and Practice (KAP) of Blood Donation among 1<sup>st</sup> and 2<sup>nd</sup> year MBBS students of a Medical College. **MATERIAL AND METHODS:** The cross sectional study was conducted in a medical college in Kollam district of Kerala in September 2013 among all 1<sup>st</sup> and 2<sup>nd</sup> year medical students. A separate Health awareness session was organized. Data was collected and analyzed with the Statistical Package of Social Sciences (SPSS) 12. **RESULTS AND OBSERVATIONS:** Not a single participant answered all knowledge questions correctly. Only 35% had adequate knowledge. The gender has no significant association with knowledge about blood donation. 90% of the respondents had a positive attitude about blood donation. Religion only plays a minor role in their decision to donate blood. Only 10% actually donated blood. 57% students gave blood to a needy relative. The most common reason for not donating blood was having no opportunity. There is a significant association between 2<sup>nd</sup> year students and blood donation. After awareness session, the overall willingness to donate blood increased from 89.3% to 97.1%. **CONCLUSION:** Only one third of students have adequate knowledge level regarding blood donation. Only few among them have donated blood. Majority of them intend to donate blood in future. Information, Education and Communication (IEC) activities should be increased and regular seminars and classes should be conducted to increase awareness among medical students for encouraging them to donate blood voluntarily.

**KEYWORDS:** Blood Donation, Voluntary, Knowledge, Attitude, Practice, Awareness

**INTRODUCTION:** Human blood is an essential element of human life and there are no substitutes to blood as yet.<sup>1</sup> Blood transfusion has become a crucial component in the management of patients presenting with accident injuries, surgical conditions, malignancies, pregnancy complications, and other medical conditions.<sup>2</sup>

Promotion of voluntary blood donation is done under safe blood program in India and 1st October is celebrated as National Voluntary Blood Donation Day.<sup>3</sup> Voluntary unpaid blood donors who give blood purely for altruistic reasons has been reported with lowest prevalence of HIV, hepatitis viruses and other blood-borne infections whereas higher infection rates are found among family or family replacement donors who give blood only when it is required by a member of the patient's family or community.<sup>4</sup>

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The numbers of potential donors were often reduced due to the strict selection criteria which were imposed to ensure the safety of the blood supplies. There is a need for blood services to organize more frequent blood drives to maintain a regular blood supply and to adopt an approach for enhancing new blood donor recruitment and retention of the donors.<sup>5</sup> One of the four components of WHO's integral strategy to promote global safety and minimize risk associated with blood transfusion is that the blood should be collected only from voluntary donors (Low risk population).<sup>6</sup>

Young medical students are healthy, enthusiastic and know the importance of blood donation. So, if recruited young, they may become future donors and also motivators. Keeping in view the above fact we did a study on undergraduate MBBS Students of our Medical College.

### AIMS AND OBJECTIVE:

1. To assess the Knowledge, Attitude and Practice (KAP) of Blood Donation among 1<sup>st</sup> and 2<sup>nd</sup> year MBBS students of Travancore Medical College, Kollam, Kerala.
2. To find out the differences in knowledge level and practice of blood donation by selected variables.
3. To impart health education and spread awareness among students about voluntary blood donation.

**MATERIAL AND METHODS:** This descriptive cross sectional study was conducted in a private medical college (Travancore Medical College) in Kollam district of Kerala, India in September 2013 among all 170, 1<sup>st</sup> and 2<sup>nd</sup> year medical students. The respondents were briefed about the aims of the study and they were ensured about the confidentiality by one of the authors. A predesigned and pretested questionnaire was used for data collection. Ethical committee consent was taken from institutional ethical committee. There was a separate Health awareness session for the students and they were given proper knowledge about the importance of blood donation.

The responses were collected and analyzed with the Statistical Package of Social Sciences (SPSS) 12. A scoring mechanism was used to understand overall knowledge level. Based on total score, adequate knowledge was classified as having a percentage of greater to or equal to 60 ( $\geq 60\%$ ). Chi square test was applied to examine the association between the knowledge levels and independent variables like gender and batch of respondents. A *p* value of  $<0.05$  was taken as statistically significant.

**RESULTS AND OBSERVATIONS:** Out of 170, 1<sup>st</sup> and 2<sup>nd</sup> year MBBS students, a total of 140 responded to the questionnaire giving a response rate of 82.3%. The age range of respondents was 19 to 21 years, with a mean age of 19.8 years. There were 44 (31.4%) males and 96 (68.6%) females. The male to female student ratio was 1:2.2.

All the participants did not have a complete knowledge regarding the various aspects of voluntary blood donation. Not a single participant was able to respond to the knowledge part of the questionnaire with 100% accuracy.

Only 35% (49) of the participants responded to 60% or more of the questions correctly. Most of them were aware of the risk of transmission by blood transfusion. The risk of transmission of HIV, HBV, HCV, malaria and syphilis was altogether affirmed by 90% (126) respondents. The minimum interval between two blood donations is usually 3 months. Only 45% of the respondents answered it correctly.

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Only 54% (75) knew the correct volume of blood collected in the process. Similarly, 64% (89) knew that the donation process lasts less than 20 minutes. Details of the Respondents knowledge of blood donation are shown in Table 1.

Knowledge question	Correct Response N (%)
Minimum age to start blood donation	119 (85%)
Minimum weight for blood donation	82 (59%)
Minimum hemoglobin level required to donate blood	80 (57%)
Minimum interval between two blood donations	63 (45%)
Amount of blood that can be donated by a person at a time	75 (54%)
Duration to refrain from doing work after the blood donation	47 (34%)
Time required for the blood level to come back to normal	50 (37%)
Kind of food to be taken after blood donation	127 (91%)
Different types of blood donors	89 (64%)
Number of patients benefited from 1 unit of whole blood	89 (64%)
Places of legal blood donation	121 (87%)
Universal donor & recipient	133 (97%)
Most required blood group	52 (37%)
Minimum Duration between blood donation and delivery of baby	55 (39%)
Screening of blood necessary before donation	140 (100%)
Infections transmitted by blood donation	126 (90%)
Required blood pressure at the time of blood donation	119 (85%)
Blood donation day	41 (29%)
Duration of a donation process	89 (64%)
Maximum duration for which platelets can be stored	47 (34%)

**Table 1: Knowledge about Blood Donation**

The gender has no significant association with knowledge about blood donation although female respondents answered better (Table 2). There is a significant association between 2<sup>nd</sup> year students and knowledge of blood donation (Table 3).

Gender	Knowledge		Total (%)
	Adequate (%)	Inadequate (%)	
Male (%)	13 (9.3)	31 (22.1)	44 (31.4)
Female (%)	36 (25.7)	60 (4.8)	96 (68.6)
Total (%)	49 (35.0)	91 (65.0)	140 (100.0)

$$\chi^2 = 0.838; p = 0.360; df=1$$

**Table 2: The association between gender and knowledge about blood donation**

Batch	Knowledge		Total (%)
	Adequate (%)	Inadequate (%)	
1 <sup>st</sup> year (%)	22 (15.7)	58 (41.4)	80 (57.1)
2 <sup>nd</sup> year (%)	27 (19.3)	33 (23.6)	60 (42.9)
Total (%)	49 (35.0)	91 (65.0)	140 (100.0)

$$\chi^2 = 4.62; p = 0.032; df=1$$

**Table 3: The association between Batch and knowledge about blood donation**

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The attitude towards blood donation has been shown in Table 4.

<b>Is blood donation a good and noble act?</b>	N (%)
Agree	140 (100%)
<b>What is your attitude towards blood donation?</b>	
Positive	126 (90.0%)
Not Positive	8 (5.7 %)
Neutral	6 (4.3%)
<b>What do you think is best source of blood donors?</b>	
Voluntary	98 (70.0%)
Replacement	10 (7.1%)
Paid	3 (2.1%)
I do not Know	7 (5.0%)
No response	22 (15.8)
<b>Are you willing to donate blood to your relative?</b>	
Yes	137 (98%)
<b>Are you willing to donate blood to Anyone?</b>	
Yes	126 (90%)
<b>Will you donate blood without knowing the religion of the recipient?</b>	
Yes	126 (90%)
<b>Do you expect any reward for blood donation</b>	
No	136 (97%)

**Table 4: Attitude towards blood donation**

All 140 respondents said that blood donation was good and a noble act. When asked about the attitude towards voluntary blood donation, 90% (126) had a positive attitude. Those who were not having a positive attitude were only 8 (6%) and 6 (4%) were neutral. Out of these 8 who were not having a positive attitude, 6 were citing parental disapproval as a cause for their attitude and 2 were afraid to donate.

Voluntary blood donation was accepted as best source of blood donation by 70% (98) respondents. 98% (137) are willing to donate blood to their relatives but 90% (126) are willing to donate blood to anyone without knowledge of recipient. Religion only plays a minor role in their decision to donate blood as almost 90% are willing to donate even if they do not know the religion of the acceptor. 97% (136) do not expect any reward for blood donation.

The practice of the donors has been shown in Table 5. It shows that out of 140 students, actually only 14(10%) donated blood. Out of these 14, 10(71%) donated only once while others donated twice (29%) but nobody donated more than twice.

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<b>Have you donated blood before</b>	n (%)
Yes	14 (10%)
No	126 (90%)
<b>How many times you have donated blood</b>	
Once	10 (71.4%)
Twice	4 (28.6%)
Thrice	0 (0%)
<b>Why did you donate blood</b>	
A relative needed blood	8 (57.1%)
A known person other than relative needed blood	2 (14.3%)
Voluntary	4 (28.6%)
<b>Are you satisfied after donating blood</b>	
Yes	14 (100%)
<b>Are you willing to donate blood in future</b>	
Yes	125 (89.3%)
No	15 (10.7%)
<b>Have you received blood</b>	
Yes	4 (3%)

Table 5: Practice of Blood Donation

Figure 1 shows the reason for their donation. 8(57%) students gave blood to a needy relative while 2(14%) donated to a known person other than relative. Only 4(29%) students donated it voluntarily. These 4 are 2<sup>nd</sup> year students who donated blood voluntarily in our hospital blood bank. All 14(100%) were very much satisfied after blood donation. The most common reason for their satisfaction was that their endeavor has helped in saving someone's life.

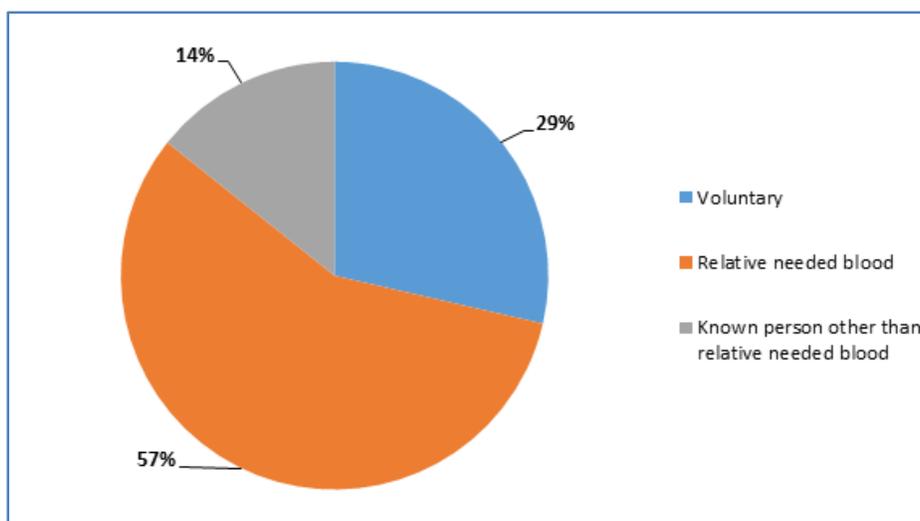
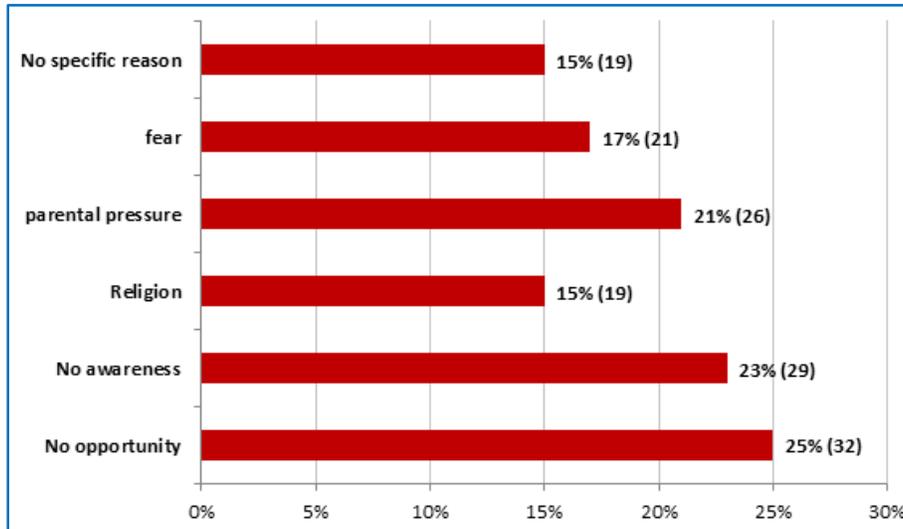


Fig. 1: Reason for blood donation among donors

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Figure 2 shows that among 126(90%) non-donors, the most common reason for not donating blood was having no opportunity (25%). The other reasons were lack of awareness (23%), parental pressure (21%), fear (17%) and religion (15%). 19(15%) students had no specific reason for not donating blood. Only 4(3%) respondents have received blood and all have received it from a relative.



**Fig. 2: Reason for not donating so far among non-donors**

NB: More than one option was allowed.

Out of 14 students who donated blood, 6 (43%) were males and 8 (57%) were females. This difference between male and female blood donors have no significant association ( $p=0.332$ ) as shown in Table 6. There is a significant association between 2<sup>nd</sup> year student and blood donation ( $p=0.023$ ) as shown in Table 7.

Gender	Blood donation status		Total (%)
	Donor (%)	Non-donor (%)	
Male (%)	6 (4.3%)	38 (27.1%)	44 (31.4%)
Female (%)	8 (5.7%)	88 (62.8%)	96 (68.6%)
Total (%)	14 (10%)	126 (90%)	140 (100.0)

$\chi^2 = 0.943; p = 0.332; df=1$

**Table 6: The association between gender and blood donation**

Batch	Blood donation status		Total (%)
	Donor (%)	Non-donor (%)	
1 <sup>st</sup> Year (%)	4 (2.9%)	76 (54.3%)	80 (57.1%)
2 <sup>nd</sup> Year (%)	10 (7.1%)	50 (35.7%)	60 (42.9%)
Total (%)	14 (10%)	126 (90%)	140 (100.0)

$\chi^2 = 5.19; p = 0.023; df=1$

**Table 7: The association between Batch and blood donation Status**

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After awareness session, only 4 students (2 males and 2 females) were unwilling to donate blood and they stated parental reasons and religious beliefs for their unwillingness. The overall willingness to donate blood increased from 89.3% to 97.1% after awareness session.

**DISCUSSION:** Blood was, is and will be always in demand. All over the world there are several medical conditions which require prompt blood transfusion. In India, before National AIDS Control Programme (NACP) 1 was launched in 1992, the blood donation was mostly a family affair or a business. The family members used to donate blood to each other or unknown donors used to earn money by donating blood. When voluntary blood donation was propounded everywhere in the globe, it became famous in India also. But still there is a wide gap between the supply and demand. So, this study was done to assess the knowledge, attitude and practice of medical undergraduates about voluntary blood donation.

In our study, 35% of the participants had adequate knowledge about some important aspects of blood donation i. e. responded to 60% or more of the questions correctly. Bharatwaj et al reported that 37.5% has adequate knowledge about blood donation.<sup>7</sup>

85% of the students in the present study knew correct age limit for donating blood. Shahshahani et al. in their study reported that 45% in the general population had correct knowledge regarding minimum age requirement for blood donation.<sup>8</sup>

In our study we found that 64% of the students were aware about number of patients that can be benefited from 1 unit of whole blood. Devi HS et al. also showed that 63.9% undergraduate students were aware of this fact.<sup>9</sup>

Present study showed that less than half of the students (45%) knew about the minimum interval between two donations. Benedict Nwogon et al. found that 21.5% of health care workers (non-physicians) had correct knowledge regarding interval of donation in a study carried out at the University of Teaching Hospital, Benin city.<sup>10</sup>

Overall all 2<sup>nd</sup> year students showed significantly higher knowledge as compared to 1<sup>st</sup> years. Kowsalya V et al. in their study also showed that 2<sup>nd</sup> year students had better knowledge about blood donation.<sup>11</sup>

In contrast to a study done among college students of Dhaka University, where there were a high number of respondents with negative attitude towards blood donation, in our study we found that the attitude towards blood donation was positive for 90% of respondents.<sup>12</sup>

Parental disapproval and fear was the main cause for not having a positive attitude. 98% were willing to donate blood to their relatives. These findings were corroborated by the results of a previous study by Jaurez O et al.<sup>13</sup>

90% are willing to donate blood to anyone without knowledge of recipient. Religion only plays a minor role in their decision to donate blood. This was seen in a study by Umakanth S et al.<sup>14</sup>

Out of 140 students, actually only 14 (10%) donated blood. Different studies have shown a range of 10-20% of blood donation among students.<sup>11,15</sup>

Among donors, 71% donated blood only once. It is very similar to the findings by Olaiya et al.<sup>16</sup> 57% of the respondents donated blood to a needy relative, which was similar to the findings of the study done by Sojka et al.<sup>17</sup>

Among 126 (90%) non-donors, the most common reason for not donating blood was having no opportunity (25%). Other studies also showed similar cause.<sup>18,19</sup> The other reasons were lack of

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awareness (23%), parental pressure (21%), fear (17%) and religion (15%). 19 (15%) students had no specific reason for not donating blood. Only 4 (3%) respondents have received blood and all have received it from a relative.

The gender has no significant association with the practice of blood donation. This is not in accordance to a study done by WHO stating that 96% of the donors in India are males.<sup>20</sup> There is a significant association between 2<sup>nd</sup> year student and blood donation.

**CONCLUSION:** Only one third of students have adequate knowledge level regarding blood donation. Female students and 2<sup>nd</sup> year students knew more about blood donation than male and 1<sup>st</sup> year students respectively. Only few among them have donated blood. Majority of them intend to donate blood in future. Information, Education and Communication (IEC) activities should be increased and regular seminars should be conducted to increase awareness among medical students for encouraging them to donate blood voluntarily. The red ribbon club should be made in all colleges and active participation should be there by faculty, staff members and everyone in the vicinity of the college/Hospital apart from medical students. There should be regular blood donation camps to make sure that safe blood is available for all patients in need.

**LIMITATION OF THE STUDY:** Major limitations of our study were those inherent to most studies on knowledge, attitudes and practices. Firstly, the responses were influenced by socially desirable attributes and there is the possibility of both recall bias and interviewer bias. Secondly, since Kollam is a multicultural city with a broad diversity and the students were from only one medical college and hence, it will not be appropriate to extrapolate completely the result which we have obtained, to the students of all medical college or general population. Thirdly, data on those who did not agree to participate in the study were not collected and analyzed to exclude the possibility of a sampling bias.

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