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Assessment of Beliefs, Behaviors and Attitude about Voluntary, Non-Remunerated Blood Donation among College Going Students: A Prospective Study in a Tertiary Care Medical College from North India

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ABSTRACT

Background: Blood services are facing a shortage of blood all over the world. Demand for blood is rising day by day and current blood donation is insufficient to meet the demand. This study aimed to assess college-going student's beliefs, behaviors and attitude regarding voluntary, non-remunerated blood donation.
Subjects and Method: This was a cross-sectional study, conducted in the Department of Transfusion Medicine PGIMER Chandigarh, India, from 2011 to 2013. A total of 1,000 (500 blood donor and 500 non-blood donor students) subjects were selected in this study by random sampling. The data were collected through interviews using questionnaires and analyzed descriptively.
Results: Assessment of the level of knowledge among blood donor participant revealed that 36 (7.2%) subjects had excellent knowledge, 222 (44.4%) had good knowledge, 152 (30.4%) had average knowledge, 90 (18%) had poor knowledge. No subjects among blood donor students had a very poor level of knowledge. Among non-blood donor participants 93 (18.6%) had a good level of knowledge, 108 (21.6%) had an average level of knowledge, 166 (33.2%) had a poor level of knowledge, 133 (26.6%) had very poor level of knowledge.
Conclusion: Data analysis revealed difference in the knowledge level among the donors and non-blood donor participants.

Keywords: knowledge, knowledge score, voluntary blood donation, college student.

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BACKGROUND

Knowledge, attitude and behavior surveys were done between 1995 and 2011 in seventeen countries classified as emerging and developing by the International Monetary Fund (Lownik et al., 2012). The subject of these studies was blood donation. These surveys have been used in many countries to understand factors that influence blood

donation and form the basis for communication and donor mobilization strategies.

These surveys were performed in seventeen countries namely Bangladesh, Brazil, Burkina Faso, Chile, China, Haiti, Iran, Moldova, Nigeria, Pakistan, Saudi Arabia, South Africa, Tanzania, Thailand, Trinidad and Tobago, Togo and Uganda. Despite considerable differences in culture and demographics of these countries many common themes emerged from different surveys (NACO, 2008). Misinformation about blood donation, Fear of blood donation, willingness to donate for family and friends, Concern about selling blood, Failure to transfer positive attitude into actual blood donation.

India is also a developing country and same general misconceptions may be prevalent in Indian population. Carrying out survey in Indian population may provide insight to developing appropriate strategies in rooting out these misconceptions. Governments of both India and Pakistan identified Knowledge and Attitude survey on blood donation as a part of their strategic plan for both blood safety and HIV prevention (NACO, 2012).

Voluntary Blood Donation Program-An Operational Guideline, National AIDS control organization (NACO), Ministry of Health and Family Welfare (MOHFW), Government of India (GOI) states that blood collection target for National AIDS Control Programme (NACP-III) is 10 million units while the existing annual blood collection in India is 7.27 million units (Dubey et al., 2014).

Therefore, as per this operational guideline of NACO, MOHFW, GOI there is a shortfall in annual blood collection of 2.73 million units from the set target. Therefore, it is need of hour to not only recruit new blood donors but also to retain existing blood donors in order to provide uninterrupted supply of blood for the needy patients. This study was planned to assess the knowledge of college going students regarding the blood donation, and also to address the misconceptions that they may be having. This study was conducted to assess college going student's beliefs, behaviors, attitude and knowledge regarding voluntary, non-remunerated blood donation.

SUBJECTS AND METHOD

1. Study Design

This was cross-sectional study conducted at Department of Transfusion Medicine, Postgraduate Institute of Medical Education and Research, Chandigarh, India from 2011 to 2013.

2. Population and Sample

The study population consisted of 500 students over the age of 18 who were eligible for blood donation after being assessed as eligible for appropriate blood donation and had filled out a consent form to be used as a research sample.

3. Study Variables

The study variables were assessment of beliefs, behavior, attitude, and knowledge non-remunerated blood donation among college going students.

4. Operational Definition of Variables

Blood donor students are those students who met the criteria of blood donation and willing to donate blood.

Non-Blood donor students are those students who met the criteria of blood donation and not willing to donate blood.

A belief is an idea that we hold as being correct.

Behavior is an attitude or behavior of a person in daily life which further becomes a habit.

Attitude are person views and evaluates something or someone, a predisposition or a tendency to respond positively or nega-

tively toward a certain idea, object, person, or situation.

Knowledge is everything that is known, guides in shaping one's actions, and can also be defined as the result of sensing everything that has happened and passed based on experience.

5. Study Instruments

Primary data were obtained using a questionnaire filled out by research subjects. Secondary data were obtained from Department of Transfusion Medicine in the form of students over the age of 18 who were eligible for blood donation. The instrument used was a questionnaire.

6. Data Analysis

The variables that had been studied were then analyzed descriptively using the frequency distribution formula.

7. Research Ethics

The ethical clearance in this study was conducted at postgraduate Institute of Medical and Research, Chandigarh (IEC) and was declared ethical based on decree number: NK/364/MD/10046-47.

RESULTS

1. Sample Characteristics

The data found that, minimum age of both donors and non-donors was 18 years and maximum age of participating donors was 24 years and that of non-donors was 26 years with p value of 0.278. The mean age for blood donors was 19.80 ± 1.31 (years) and for non-donors was 19.69 ± 1.69 (years) with overall mean of 19.75 ± 1.51. Range for age in blood donors was 18-24 (years) and in non-donors was 18-26 (years) with overall range from 18-26 (years) (Table 1).

Table 1. Age distribution among participants.

Participants (N = 500)	Age (Years)		Range (years)	p
	Mean	SD		
Donors	19.80	1.31	18-24	
Non-Donors	19.69	1.69	18-26	0.278
Total	19.75	1.51	18-26	

Table 2. Gender distribution among participant.

Participants	Donor		Non-donors		p
	n	%	n	%	
Male	379	75.80	275	55.0	<0.001
Female	121	22.40	225	45.0	

Table 3. Percentage distribution of blood donors and non donor according to their level of knowledge about blood donation

Knowledge	Category	Donor		Non-donors	
		n	%	n	%
Knowledge	Very poor (<40%), score= 0-9	0	0	133	26.60
	Poor (<50%), score= 10-12	90	18	166	33.20
	Average (<60%), score= 13-14	152	30.40	108	21.60
	Good (<75%), score= 15-18	222	44.40	93	18.60
	Excellent (>75%), score= 19-22	36	7.20	0	0

Table 2 showed the data depicts that 75.80% of donors were males and 24.20% were females in blood donor students, whereas among non-blood donor participants there was 55.0 % of male gender and 45.0 % of female gender. In the present

study a greater number of blood donors was of male gender as compared to female and this difference was statistically significant in both donor and non-donor study population. The percentage distribution of blood donors and non-donor according to their level of knowledge about blood donation showed in table 3.

Table 4. Percentage distribution of blood donors and non donor according to their level of knowledge about blood donation.

Variables	Category	Donor		Non-donors	
		n	%	n	%
Knowledge	>50%	410	82.0	201	40.20
	<50%	90	18.0	299	59.80

Table 4 showed that participants on blood donor students about 82% (410) students had knowledge level of >50% regarding blood donation process whereas 18% (90) students had knowledge level of less than fifty percent whereas among non-blood donor participants 40% (201) students had knowledge level of more than fifty percent whereas 60.0% (299) students had knowledge level of <50%. The difference in knowledge between blood donor and non-blood donor is statistically significant with odds ratio of 6.78 with p< 0.001.

Table 5. Comparative mean of knowledge score.

Participants	Mean	SD	p
Donors	14.71	2.48	<0.001
Non-donors	11.55	2.82	

Table 5 showed mean knowledge among blood donor participants was 14.71 and among non-blood donor participants was 11.55 and overall mean of 13.13. The difference in knowledge level among the participants in blood donors and non-blood donors was statistically significant with p< 0.001.

Table 6 below stated the findings of present study are comparable with the various other studies as depicted in table 6.

Table 6. Comparison of knowledge level

Country	Knowledge				
	Uses of donated blood	Typing of donated blood	testing of donated blood	age requirement	interval requirement
Present study ɣ	62%	96.0%	82.7%	40.2%	67.%
Present study ɣ	*	91%	66%	17·5%	44·5%
Bangladesh (1997)	*	*	45·7%	*	*
Brazil (2008)	89·3%	*	*	23·3%	23·3%
Chile (2007)	*	*	84·4%	50·1%	38%
Haiti (2004)	85·3%	95·5%	95·5%	44·8%	74·1%
Iran (2006)	79·5%	*	*	3·7%	*
Iran (2007)	'Quite High'	95%	*	'Quite Low'	24%
Moldova (2008)	*	*	*	5·8%	54·4%

DISCUSSION

The present study was conducted on 1000 college going students whereas study from Lucknow India (Dubey et al., 2014). Sampled 1200 person (400 each voluntary blood donor, replacement donor and non-blood donor), twelve hundred and eighty adults in a rural area were sampled in China (Zaller et al., 2005).

On analyzing the demographic data, it was observed that the mean age for blood donor participants was 19.80 ± 1.31(years) and for non-donor was 19.69 ± 1.69 (years), the overall mean for both the group combined together was 19.75 ± 1.51(years). Range for age among blood donor participants was 18-24 (years) and in non-blood donor participants was 18-26 (year) and the overall range for both blood donor and non-blood donor participants was 18-26 (years).

When data in relation to gender distribution of blood donor participants was analyzed, it was found that 379 (75.8%) of blood donor participants was male and 121 (24.2%) was female and among non-blood donor participants 275 (55.0 %) was male and 225 (45.0 %) was female. It was observed in the study that a greater number of blood donors was of male gender as compared to female and this difference was statistically significant ($p< 0.001$). The overall percentage of female was 35 % in the present study which was comparable with the finding in the study conducted at Lucknow by Dubey et al. (26.4 %).

On analyzing the knowledge level among the blood donor and non-blood donor participants it was assessed that blood donor participants had more knowledge than non-blood donor participants. The marks obtained by the blood donor participants in each question were more as compared to non-blood donor participants. Difference in marks obtained among blood donors and non-donor participants were statistically significant for at least 80 % of the question. The average knowledge score among blood donor participants was more than that of non-blood donor participants. The mean value of knowledge among blood donor participants was 14.71 ± 2.48 with range of marks 10 to 22 and among non-blood donor participants was 11.55 ± 2.82 with marks ranging from 3 to 16. Among blood donor students 410 (82 %) students scored more than fifty percent marks and 90 (18%) students scored less than fifty percent marks whereas among non-blood donor participants 201 (40.2%) participants scored more than fifty percent and 299 (59.80%) non blood donor students scored less than fifty percent.

This finding of the present study is consistent with the observation of Shenga, et al. (2008) It was observed in the present study that knowledge regarding , blood group systems in human beings, when World blood donor day and National voluntary blood donation day celebrated in India, which blood group are universal blood donor and universal blood recipient, status of sterility of the needle used in blood donation, screening test done on collected blood, disease that might spread by the transfusion of unscreened blood and blood products, and various component prepared from donated single unit of whole blood, was good in both blood donor students and non-blood donor students, but blood donor participants had more knowledge than non-blood donor students.

However for the questions such as; legal age for blood donation in India, minimum time between two donations, minimum time between two platelet donations, number of days collected blood can be stored in blood bank, importance of hemoglobin estimation, minimum weight of a person for blood donation, whether blood transfusion between first degree rela-

tive is safe or not, there was low level of knowledge among both the blood donors and non-blood donors participants, however even in these questions blood donor participants scored more than non-blood donor participants.

It was concluded that Blood donor students had more knowledge regarding blood donation as compared to non-blood donor students. Knowledge among blood donor participant revealed that 36 (7.2%) participants had excellent knowledge, 222 (44.4%) had good knowledge, 152 (30.4%) had average knowledge, 90 (18%) had poor knowledge. No participants among blood donor students had very poor level of knowledge. Among non-blood donor participants 93 (18.6%) had good level of knowledge, 108 (21.6%) had average level of knowledge, 166 (33.2%) had poor level of knowledge, 133 (26.6%) had very poor level of knowledge).

AUTHOR CONTRIBUTION

Shailesh Kumar Mishra is the main author who developed the study design, supervised the study progress and prepared the manuscript and planned and supervised the statistical analysis and reviewed the manuscript, also organized and analyzed the data and wrote the first draft of the results.

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This study is self-funded.

CONFLICT OF INTEREST

There is no conflict of interest in this study.

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