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Knowledge, Attitude and Practice followed by Indian Blood Donors

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ABSTRACT

Background: The shortage of blood in the blood banks has always been a challenging issue. In India, there are lot are lot of myths, misconception and malpractices regarding blood donation. Therefore, we aimed to identify the knowledge level of laymen about blood donation practices, their attitude and practices followed by Indian donors, so that we can identify these factors to overcome problem of blood shortage in our blood bank in future.
Methods: The study was a cross-sectional descriptive study conducted on 200 healthy persons who were visiting various outpatient departments of All India Institute of Medical Sciences, Rishikesh. The sampling techniques used for the present study was non- probability purposive sampling.
Results: Most donors were men (66%) and aged 18-27 years (48.5%). Only 19% of subjects had adequate level of knowledge regarding blood donation. Only 0.5% agreed with blood donation which showed that people had a negative attitude towards it. Most (83%) had bad practice for blood donation and had not experienced it.
Conclusion: The general public had inadequate knowledge about blood donation. Participants from general population were strongly against blood donation and actually did not donate blood. This gap in knowledge, attitude and practice can be corrected by providing awareness for blood donation in the schools, colleges and mass media.

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Introduction

Blood transfusion is a vital constituent of modern health care. It contributes to saving millions of lives in both regular and emergency situations and improves life expectancy and quality of life of patients with different conditions. Blood is of paramount importance in major surgeries, complicated pregnancies, road traffic accidents, cancer patients or is the fundamental backbone of treatment of patients with thalassemia and other hematologic disorders. Increased demand for blood products is partly due to increased life expectancy and improved health care facilities.[1] Worldwide, people should follow the trends of blood donation to save millions of lives. Among different types of blood donation, the safest method is called as voluntary blood donation.[2]

World Health Organization (WHO) has emphasized that 100% of blood donation should be on voluntary basis by 2020.[3] Globally about 79 countries usually collect 90% blood from voluntary blood donors. However, about 56 countries collect 50% blood from family replacement donors or paid donors including India.[4] It is stated that in India, there is a need for 8 million units of blood every year.[5] Out of this, only half of the required blood is obtained from voluntary donors.[6]

Blood donation programs in India are conducted by various organizations and hospitals by organizing blood donation camps. Despite shortage of the donated blood, various efforts have been made by government and other

organizations to compensate for the gap in blood supply over the years.[7]

The number of voluntary blood donors increased from 54.4% (2006-2007) to 83.1% (2011-2012) in India with increasing blood from 4.4 million units in 2006-2007 to 9.3 million units in 2012-2013. The ministry of health and family welfare (MOHFW) in 2016 reported a donation of 10.9 million units where the requirement was about 12 million units.[8]

In Uttarakhand, a state in the northern part of India, the literacy rate is around 70%, but still general public is not aware of the blood donation practices. The study was aimed to identify the knowledge, attitude and practice of blood donation among blood donors of this area.

Materials and Methods

An observational, cross-sectional descriptive study was conducted at various outpatient departments of All India Institute of Medical Sciences, Rishikesh, India. The purposive sampling technique was used to collect samples from the studied population. Ethical permission was taken from the Institutional Ethical Committee (ECR/736/Inst/UK/2015).

Formula used for sample size calculation:

$$n = \frac{\left(1 - \frac{n}{N}\right) \times t^2 (p \times q)}{d^2}$$

Where: n= sample size, N= size of the eligible population.

t^2=square value of the standard deviation score that refers to the area under a normal distribution of values, p= percentage for which we are competing the sample size. q=(1-p)

d^2 = square value of one half to the precision internal around the sample estimate.

200 persons (including 10% attrition) who were among blood donors were selected for the study. Research tools consisted of socio-demographic sheets, questionnaire for knowledge assessment, likert scale for attitude assessment and practice questionnaire for assessing expressed practice. Characteristics sheet mainly included age, gender, religion, marital status, residence, qualification, occupation, monthly income and their family type. Knowledge questionnaire was consisted of 15 items. This tool was validated by experts for content validity and reliability was checked by test retest-reliability (r=0.90) showing excellent reliability. Practice checklist was a "5-point Likert scale" consisting of 10 positive statements. The content validity was developed by experts and test-retest reliability (r=0.95) showed excellent reliability. Expressed practice rating scale consisted of 8 items including "yes and no" options. The content validity was again developed by expert opinion and test-retest reliability (r=0.85) showed good reliability. The Pilot study was done at the final stage of planning

Table 1: Characteristics of blood donors

Sr. No.	Variables	Options	Frequency	Percentage
1.	Age	18-27 years	97	48.5
		28- 37 years	65	32.5
		38- 47 years	38	19
2.	Gender	Male	132	66
		Female	68	34
3.	Religion	Hindu	163	81.5
		Muslim	23	11.5
		Sikh	6	3
		Christian	3	1.5
		Others	5	2.5
4.	Marital status	Married	125	62.5
		Unmarried	73	36.5
		Widow	2	1
5.	Residence	Rural	88	44
		Urban	96	48
		Semi-urban	16	8
6.	Qualification	Illiterate	14	7
		High School	40	20
		Secondary education	43	21.5
		Undergraduate or above	103	51.5
7.	Occupation	House maker	39	19.5
		Laborer	48	24
		Government employees	36	18
		Businessman	77	38.5
8.	Monthly income	Less than 10,000 Rs/month	69	34.5
		10,000-20,000 Rs/month	61	30.5
		More than 20,000 Rs/month	70	35
9.	Family type	Joint	133	66.5
		Nuclear	66	33.0
		Extended	1	0.5

phase to explore and test research elements to make any relevant further modifications needed in the research and methodology. 30 samples were selected for pilot study after acquisition of ethical permission from the institute. Data analysis was performed by using SPSS 21.0 version.

Results

In this study, 200 healthy donors were enrolled. Most (66%) were men and aged 18-27 years (48.5%). They belonged to the Hindu religion (81.5%), were married (62.5%), belonged to urban areas (48%) and their level of education was equal or more than undergraduate (51%). 38.5% were businessmen, the monthly income was less than 10,000 Rs in 34.5% and 66.5% belonged to joint family as shown in Table 1.

Knowledge, attitude and practice scores of blood donors

Table 2: Knowledge, attitude and practice scores of blood donors

Sr. No.	Knowledge Scores	Frequency	Percentage
1.	Inadequate Knowledge=IA (<5)	26	13
2.	Moderate Knowledge=MK (6-10)	135	68
3.	Adequate Knowledge=AK (11-15)	39	19
	Attitude Scores		
1.	0-10 (Strongly Agree)	0	0
2.	10-20 (Agree)	1	0.5
3.	21-30 (Uncertain: U)	15	7.5
4.	31-40 (Disagree: D)	76	38
5.	41-50 (Strongly Disagree)	108	54
	Practice Scores		
1.	0-4 (Bad Practice=BP)	166	83
2.	5-8 (Good Practice=GP)	34	17

Table 3: Association between knowledge scores and characteristics of blood donors

Sr. No.	Variables	Options	Knowledge			Calculated value	P value
			IA	M	A		
1.	Age	18-27 years	11	68	18	0.351[α]	0.704
		28- 37 years	13	41	11		
		38- 47 years	2	26	10		
2.	Gender	Male	21	82	29	2.736[α]	0.067
		Female	5	53	10		
3.	Religion	Hindu	19	112	32	0.447[α]	0.640
		Muslim	4	15	4		
		Sikh	2	2	2		
		Christian	0	3	0		
		Others	1	3	1		
4.	Marital status	Married	16	88	21	1.220[α]	0.297
		Unmarried	9	47	17		
		Widow	1	0	1		
5.	Residence	Rural	12	67	9	6.302[α]	0.002*
		Urban	12	61	23		
		Semi-urban	2	7	7		
6.	Qualification	Illiterate	6	7	1	10.401[α]	0.000*
		High School	7	26	7		
		Secondary education	9	30	4		
		Graduation	4	72	27		
7.	Occupation	House maker	3	31	5	0.713[α]	0.491
		Laborer	9	31	8		
		Government employees	5	21	10		
		Businessman	9	52	16		
8.	Monthly income	<10,000 Rs/month	10	48	11	2.367[α]	0.072
		10,000-20,000 Rs/ month	10	43	8		
		>20,000 Rs/month	6	44	20		
9.	Family type	Joint	15	90	28	5.140[α]	0.002*
		Nuclear	11	44	11		
		Extended	0	1	0		

[α]- ANOVA, * Significant

are shown in Table 2. In this study only 19% of donors had adequate knowledge for "blood donation". Remaining had either moderate (68%) or inadequate knowledge (13%). Most donors (54%) strongly disagreed with voluntary blood donation (attitude). Only 0.5% agreed for voluntary blood donation. Most (83%) had not donated blood during their life.

Table 3 shows the association of knowledge scores with socio-demographic variables. We found a significant association between residence, qualification and family type with knowledge for blood donation. The type of family had a significant association with attitude towards blood donation (Table 4). Religion and residence had a significant association with practice scores (Table 5).

Pearson correlation coefficient value (0.312) showed a moderate and positive correlation between knowledge and attitude which indicated that as knowledge of people increases, the attitude toward voluntary blood donation improved (Table 6).

Discussion

Our study showed that majority of blood donors were male which were similar to the results from another study.[9] Reasons for less female donors may be conditions such as low body weight or lower hemoglobin values among females. Most of the donors belonged to the age group of 18-27 years which showed again similar results with another study in which the dominant donor age group belonged to 18 -25 years.[10] In our study, 19% of participants had adequate knowledge for voluntary blood donation, where a cross sectional study conducted in Mumbai, India on 111 medical interns showed that only 45% of donors had correct and adequate knowledge for blood donation.[11] Although there is a significant difference between our study population and that study where medical interns comprised the study group.

Only 0.5% of blood donors were in agreement with voluntary blood donation. Another study from south India showed 74% agreement in attitude for blood donation.[10] The difference in opinion of blood donors was due to geographical variation which could be a barrier for government motivational programs to improve the idea of blood donation. Regarding the item of "to put blood donation in practice"; in our study, the donors did not show good statistics for blood donation. Lack of practice in blood donation could be due to less knowledge and

Table 4: Association between attitude scores and characteristics of blood donors

Sr. No.	Variables	Options	Attitude					Calculated value	P value
			SA	A	U	D	SD		
1.	Age	18-27 years	---	0	7	42	48	1.449[α]	0.230
		28- 37 years	---	1	7	24	33		
		38- 47 years	---	0	1	10	27		
2.	Gender	Male	---	0	5	54	73	3.461[α]	0.017
		Female	---	1	10	22	35		
3.	Religion	Hindu	---	0	10	56	97	4.308[α]	0.006
		Muslim	---	1	2	12	8		
		Sikh	---	0	0	5	1		
		Christian	---	0	1	2	0		
		Others	---	0	2	1	2		
4.	Marital status	Married	---	1	12	45	67	0.984[α]	0.401
		Unmarried	---	0	3	30	40		
		Widow	---	0	0	1	1		
5.	Residence	Rural	---	1	6	35	46	0.561[α]	0.641
		Urban	---	0	9	36	51		
		Semi-urban	---	0	0	5	11		
6.	Qualification	Illiterate	---	1	2	6	5	4.152[α]	0.007
		High School	---	0	1	20	19		
		Secondary education	---	0	9	17	17		
		Graduation	---	0	3	33	67		
7.	Occupation	House maker	---	1	3	17	18	1.299[α]	0.276
		Laborer	---	0	5	17	26		
		Government employees	---	0	5	7	24		
		Businessman	---	0	2	35	40		
8.	Monthly income	<10,000 Rs/month	---	0	8	30	31	2.367[α]	0.072
		10,000-20,000 Rs/ month	---	1	2	28	30		
		>20,000 Rs/month	---	0	5	18	47		
9.	Family type	Joint	---	1	3	51	78	5.140[α]	0.002*
		Nuclear	---	0	12	24	30		
		Extended	---	0	0	1	0		

[α]- ANOVA, *Significant

Table 5: Association between practice scores and characteristics of blood donors

Sr. No.	Variables	Options	Practice		Calculated value	P value
			BP	GP		
1.	Age	18-27 years	80	17	0.528$^{\alpha}$	0.468
		28- 37 years	52	13		
		38- 47 years	34	4		
2.	Gender	Male	111	21	0.327$^{\sigma}$	0.567
		Female	55	13		
3.	Religion	Hindu	138	25	8.032$^{\alpha}$	0.005*
		Muslim	19	4		
		Sikh	6	0		
		Christian	2	1		
		Others	1	4		
4.	Marital status	Married	102	23	0.599$^{\alpha}$	0.440
		Unmarried	62	11		
		Widow	2	0		
5.	Residence	Rural	71	17	0.279$^{\alpha}$	0.598*
		Urban	82	14		
		Semi-urban	13	3		
6.	Qualification	Illiterate	13	1	0.033$^{\alpha}$	0.856
		High School	32	8		
		Secondary education	33	10		
		Graduation	88	15		
7.	Occupation	House maker	34	5	1.827$^{\alpha}$	0.178
		Laborer	41	7		
		Government employees	31	5		
		Businessman	60	17		
8.	Monthly income	<10,000 Rs/month	57	12	0.238$^{\alpha}$	0.626
		10,000-20,000 Rs/month	49	12		
		>20,000 Rs/month	60	10		
9.	Family type	Joint	110	23	0.010$^{\alpha}$	0.919
		Nuclear	56	10		
		Extended	0	1		

$^{\alpha}$- ANOVA, σ- Chi square, * Significant

Table 6: Pearson correlation coefficient between knowledge scores and attitude scores for blood donation

Sr. No.	Variables	Options	Attitude					r	Relationship
			SA	A	U	D	SD		
1.	Knowledge	Inadequate	---	1	7	11	7	0.312	Moderate
		Moderate	---	0	7	55	73		
		Adequate	---	0	1	10	28		

awareness among donor community. A "health education awareness program" which preferably would be simple and targeted seems necessary in the field of voluntary blood donation.

The study also showed that people who lived in rural areas were less educated and belonged to joint family and had inadequate knowledge for blood donation. Another comparative cross sectional study conducted on 360 students showed that rural students had only 19 % knowledge as compared to urban students (20.8%).[2]

Participants who belonged to joint family had adequate knowledge for blood donation; but surprisingly, they disagreed for donation in practice. So more blood donation awareness program in rural areas of north India should be conducted to motivate youth population.

This study also showed moderate positive relationship between knowledge and attitude for voluntary blood donation which is new finding we got in our study. So knowledge, attitude and practice studies will help us to understand various factors that influence blood donation which is the main base for donor mobilization.

Conclusion

The present study showed average degrees of knowledge and attitude toward voluntary blood donation among a small population of an area of India; but to put in practice, the figures were very low. Male young adults, educated and urban group people had better knowledge for voluntary blood donation. Finding of our study also suggested that there should be more regular and scheduled educational program at community level for voluntary blood donation in Uttarakhand, India. By all these measures, we can have more potential healthy donors from community to fulfill the need of our country.

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Conflict of Interest: None declared.

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