

Research Article

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A study of knowledge, attitudes and practices of voluntary blood donation among relatives of patients admitted to a tertiary care hospital in North coastal Andhra Pradesh, India

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ABSTRACT

Background: Replacement blood donation by family members of patients provides more than 45% of blood collected in India. This increases the risk of transfusion-transmitted infections. In our country where comprehensive laboratory testing is difficult, 100% non-remunerated voluntary blood donation is the safest method of blood collection. Objective was to study the depth of knowledge of blood donation among the relatives of patients admitted in the hospital, to assess the attitude of the people towards blood donation, to study the practices of blood donation followed by the general community and to understand the myths associated with blood donation in the community.

Methods: The cross sectional study was carried out during the months of May and June 2015 at Anil Neerukonda Hospital, a tertiary care teaching hospital attached with NRI institute of Medical Sciences, Visakhapatnam. The subjects were selected by systematic random sampling from individuals aged between 18 and 60 years from attendants of patients admitted at the hospital. A semi-structured self-administered questionnaire was used to collect information from each participant on socio-demographic characteristics, knowledge, attitude and practices affecting voluntary blood donation.

Results: There is a deficit of knowledge with regards to need for blood transfusion, methods as well as risks of remunerated blood transfusion uniformly across all ages and both the genders. Though a majority of individuals were willing for voluntary blood donation, the fears for donation and ignorance of the procedure has been a deterrent.

Conclusions: Education and motivation by blood banks and health professionals can lead to increase in non-remunerated voluntary blood donations as a majority of individuals are willing for blood donation.

Keywords: Voluntary blood donation, Relatives, Knowledge, Attitude, Practices

INTRODUCTION

It is not unusual for people to be motivated to come forward to voluntarily donate blood during natural calamities and disasters. However the need for blood transfusion is much higher in day-to-day hospital practice in conditions of surgeries, severe blood loss, anemia and

bleeding disorders. The demand for blood surpasses the supply of blood due to severe dearth of voluntary blood donations in India. Against a need of nearly 8.5 million units of blood per year only 4.4 million units are available, out of which only 52% are by voluntary donors.¹ It is accepted fact that safest blood donors are

non-remunerated, voluntary blood donors from low risk population.

Donation of blood has always been considered as a humanitarian act and a positive behavioral phenomenon. By and large blood donors can be categorised broadly as - Voluntary Blood Donors, Replacement Blood Donors, and Professional Blood Donors. These categories are based on the behavioral patterns of the donors. Autologous blood donation may be considered as a sub type of replacement donation.² Even the National Blood policy of India recognizing the importance of voluntary blood donation and has emphasized on promotion of voluntary blood donation as an important strategy.³ According to the National voluntary blood donation guidelines family/replacement donors still provide more than 45% of the blood collected in India. Such donors are supposed to be associated with a significantly higher prevalence of transfusion-transmissible infections (TTIs) including HIV, Hepatitis B, Hepatitis C, syphilis and malaria.²

For a safe blood service in our country, where comprehensive laboratory tests are neither possible nor pragmatic, it is best to switch over to 100% voluntary donations, as it is now established that only voluntary non-remunerated regular donation is the safest. Thus, one of our key strategies to enhance blood safety is to focus on motivating non-remunerated blood donors and phasing out even replacement donors.

According to WHO an estimated 38% of reported voluntary blood donations are contributed by people under the age of 25 years. WHO also insists countries to encourage young people to achieve 100% non-remunerated blood donation.⁴ There are various barriers to donating blood that influence the behavior of people towards blood donation. Predominant among them is lack knowledge in addition to cultural beliefs in some ethnic groups, socio-economic factors.⁵ Studies have shown that knowledge about voluntary blood donation could translate into practices.⁶ The role of health education paves way in a big way to impart knowledge to the lay person on the need for voluntary blood donation. The present study aims at understanding the knowledge, attitudes and practice of people towards voluntary blood donation.

The objective of the study was to study the depth of knowledge of blood donation among the relatives of patients admitted in the hospital, to assess the attitude of the people towards blood donation and study the practices of blood donation followed by the general community and to understand the myths associated with blood donation in the community.

METHODS

The cross sectional study was carried out during the months of May and June 2015 at Anil Neerukonda

Hospital, a tertiary care teaching hospital attached with NRI institute of Medical Sciences, Visakhapatnam. The subjects were selected by systematic random sampling from individuals aged between 18 and 60 years from attendants of patients admitted at the hospital. A semi-structured self-administered questionnaire was used to collect information from each participant on socio-demographic characteristics, knowledge, attitude and practices affecting voluntary blood donation. A written informed consent was taken from each person. Illiterate participants were orally questioned and answers were recorded. 213 volunteers were evaluated. Subjects not willing to participate were excluded from the study. Data was analyzed with descriptive statistics (frequency, percentage, mean and standard deviation) and inferential statistics (chi square (χ^2)) is used to determine the association between selected demographic variables and knowledge of blood donor.

RESULTS

A total number of 213 subjects were evaluated of which 101 (47.42%) were males and 112 (52.58%) were females (Figure 1). When categorized in the age groups of less than 30 years, 31 to 50 years and more than 50 years, the subjects were nearly equally matched except in the less than 30 years age group where female subjects outnumbered males (Figure 2). Lesser educational qualification was noticed among female subjects in comparison with males, however when education of high school and above were evaluated both males and females had nearly equal distribution of 52.4% and 49.1% respectively (Figure 3). 52% of males and 36% of female subjects were not aware of the conditions which needed blood transfusion and these figures were higher in the elder age groups above 50 years in both males and females. More than 80% of individuals questioned in both males and females were of the opinion that blood transfusion can save lives (Table 1).

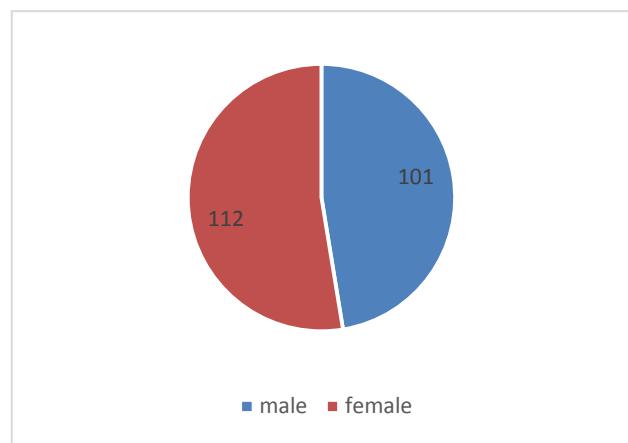


Figure 1: Gender distribution.

Nearly 40% of men and women believed that by donating blood the donors are likely to get disease. At the same time 40% men and 34% women had opined that donors

would not contact any illness during blood donation. A similar number of subjects across all age groups felt that blood donation gives weakness in the donor although it does not impair them from performing their normal work. Less than 10% of subjects felt that long duration of rest is needed following blood donation. 47% of male subjects and 63% of female subjects were not aware of the amount of blood drawn during blood donation. 37% males and 42% females felt the procedure is painful. 46% of males and 36% of female subjects answered that blood can be donated once in 6 months.

There is a lack of awareness of the age at which blood can be donated among 58% of males and 64% of females (Table 2). Nearly 30% male and female subjects were aware of the hazards of procuring blood from professional donors and 31% among males and 25% of females knew that diseases can be spread by transfused blood. Less than 25% of evaluated subjects could mention the names of diseases spread by transfused blood among both males and females. 65% of female subjects and 70% of male subjects were aware that donated blood is tested for infections before transfusion.

Table 1: Knowledge of voluntary blood donation.

	<30 years age			31 to 50 years age			<50 years age			P-value
	Male (n=26)	Female (n=48)	P-value	Male (n=51)	Female (n=43)	P-value	Male (n=24)	Female (n=21)		
1. Who need blood transfusion?										
A. Anemia (%)	26.92	20.83	0.55	19.61	27.91	0.34	20.83	28.57	0.54	
B. Surgery (%)	26.92	39.58	0.29	23.53	27.91	0.63	12.5	14.28		
C. Others (%)	7.7	10.42	0.70	3.92	6.98	0.50	4.76	0.36		
Don't know (%)	38.46	29.17	0.41	52.94	37.2	0.12	66.67	52.39	0.32	
2. Can blood transfusion save lives?										
A. Yes (%)	88.46	93.75	0.42	80.39	83.72	0.67	79.17	66.67	0.34	
B. No (%)		2.09		3.92				4.76		
C. Don't know (%)	11.54	4.16	0.22	15.69	16.28	0.93	20.83	28.57	0.54	
3. Can blood donation cause disease in donor?										
A. Yes (%)	46.15	52.08	0.62	39.21	37.21	0.84	33.33	42.86	0.84	
B. No (%)	46.15	39.59	0.58	35.29	32.55	0.77	41.67	28.57	0.35	
C. Don't know (%)	7.70	8.33	0.92	25.50	30.24	0.61	25.00	28.57	0.78	
4. Does blood donation cause weakness in donor?										
A. Yes	53.85	58.33	0.71	37.25	51.17	0.17	45.83	47.62	0.87	
B. No	38.46	35.42	0.79	37.25	23.25	0.14	37.5	33.33	0.56	
C. Don't know	7.69	6.25	0.91	25.50	25.58	0.99	16.67	19.05	0.83	
5. Can you go for work after blood donation?										
A. Yes	34.61	27.08	0.49	29.41	23.26	0.50	34.61	42.86	0.71	
B. No	61.54	50	0.34	49.02	48.84	0.98	45.83	28.57	0.23	
C. Don't know	3.85	22.92	0.03	27.57	27.90	0.47	16.67	28.57	0.33	
6. Is blood donation painful?										
A. Yes	30.77	52.08	0.07	39.21	34.88	0.66	41.67	38.10	0.81	
B. No	53.55	31.25	0.05	41.18	30.24	0.27	41.67	42.85	0.93	
C. Don't know	15.38	16.67	0.88	19.61	34.88	0.09	16.66	19.05	0.83	
7. How much blood is drawn during blood donation?										
A. <300 ml	15.38	18.75	0.71	25.48	16.28	0.27	37.5	52.38	0.31	
B. 300 to 500 ml	38.46	12.50	0.009	23.52	16.28	0.38	20.83	4.77	0.11	
C. > 500 ml	46.16	68.75	0.05	51.00	67.44	0.10	41.67	42.85	0.93	
8. How frequently can one donate blood? Once in										
A. 3 months	11.54	16.67	0.55	11.76	7.00	0.42	16.67	9.52	0.48	
B. 6 months	46.15	47.92	0.27	49.02	37.2	0.25	41.67	42.85	0.93	
C. 1-year	30.77	6.25	0.004	11.76	18.6	0.35	12.50	14.33	0.85	
D. Don't know	11.54	29.16	0.08	27.46	37.2	0.31	29.16	33.33	0.76	

71% of male subjects and 66% of female subjects were either not aware of any benefit to the donor by donating

blood or felt that there was no benefit to the health of the donor. 34% of male subjects and 21% of female subjects

interviewed had donated blood in the past and much lower in the groups of females aged less than 30 years (14.5%) and over 50 years (19%) (Table 3). Among those who have donated blood in the past, the majority have donated only once. 38% of males have given no reason for not donating blood, whereas 6% had fear and 4% had no opportunity to donate blood. Among female subjects

60% had no reason for not donating blood and 5% subjects could not donate due to fear and another 5% due to lack of opportunity to donate. Nearly 80% of male and 70% of female subjects across all age groups were willing to donated blood voluntarily. Over 80% of all subjects including males and females were willing to motivate others to donate blood voluntarily.

Table 2: Knowledge of voluntary blood donation.

	< 30 years		31 to 50 years		>50 years		
	Male (n=26)	Female (n=48)	Male (n=51)	Female (n=43)	Male (n=24)	Female (n=21)	
9. At what age can one donate blood?							
a. 18 years	23.08	12.50	0.23	15.68	6.97	0.19	16.67
b. >18 years	30.77	33.33	0.82	17.65	20.93	0.68	29.16
c. Don't know	46.15	54.17	0.50	66.67	72.10	0.56	54.17
10. Is there a health hazard by accepting blood from professional donor?							
a. Yes	23.08	37.50	0.20	39.21	34.88	0.66	16.67
b. No	23.08	25.00	0.85	29.41	13.96	0.07	20.83
c. Don't know	53.84	37.50	0.84	31.38	51.16	0.05	62.50
11. Are you aware that diseases can be transmitted by transfused blood?							
a. Yes	30.77	31.25	0.96	27.45	13.95	0.11	41.67
b. No	23.08	25.00	0.85	23.53	23.25	0.97	12.50
c. don't know	46.15	43.75	0.84	49.02	62.80	0.18	45.83
12. Can you name the diseases spread by blood transfusion?							
a. HIV	15.38	29.16	0.18	13.72	6.97	0.28	25.00
b. Jaundice		10.42		3.92	2.32	0.65	8.33
c. Cancer							14.30
d. Other	11.53	2.08		3.92	4.65	0.86	8.33
13. Is donated blood tested for infections?							
a. Yes	73.08	68.75	0.69	66.67	55.82	0.28	75.00
b. No		6.25		9.80	9.30	0.93	8.33
c. don't know	26.92	25.00	0.85	23.53	34.88	0.22	16.67

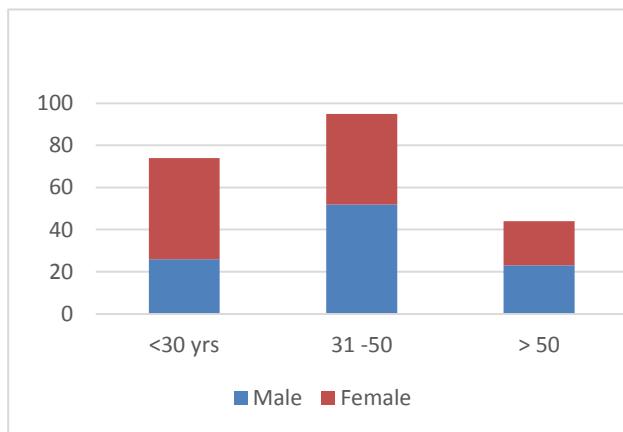


Figure 2: Age distribution.

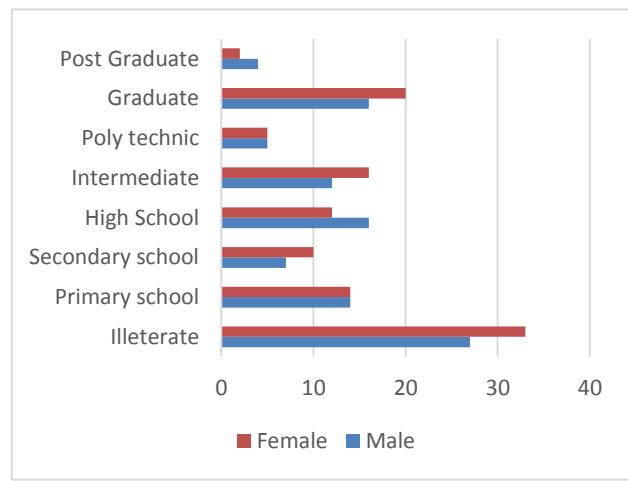


Figure 3: Literacy status.

Table 3: Attitudes and practices.

	<30 years		31 to 50 years		>50 years	
	Male (n=26)	Female (n=48)	Male (n=51)	Female (n=43)	Male (n=24)	Female (n=21)
1. Does donating blood benefit the donor?						
a. Yes	26.92	35.42	0.45	27.45	25.58	0.84
b. No	19.25	10.42	0.28	5.88	11.63	0.32
c. Don't know	53.83	54.16	0.97	66.67	62.79	0.69
2. Have you donated blood voluntarily ever?						
a. Yes	38.46	14.58	0.01	31.37	30.23	0.90
b. No	61.54	85.42	0.01	68.63	69.77	0.90
3. If donated earlier, how many times?						
a.1	38.46	10.42	0.004	17.65	23.25	0.50
b.1 to 5	23.08	6.25	0.03	7.84	4.65	0.52
c.>5				7.84		
4. Reasons for not donating blood voluntarily?						
a. anemia		2.08		3.92		4.17
b. weakness		2.08				4.76
c. disease	11.54			3.92	2.32	0.65
d. No reason	30.77	62.5	0.009	45.10	58.14	0.20
e. Fear	3.85			7.84	6.98	0.87
f. Deficit knowledge	3.85	4.17	0.94			4.17
g. No opportunity		4.17		3.92	4.65	0.86
5. Are you willing to donate blood voluntarily?						
a. yes	92.30	77.08	0.10	80.39	69.77	0.23
b. no	7.70	22.92	0.10	19.61	30.23	0.23
6. Do you motivate others to donate blood voluntarily?						
a. Yes	96.15	91.67	0.46	88.24	67.44	0.014
b. No	3.85	8.33	0.46	11.76	32.56	0.014
					20.83	9.52
						0.29

DISCUSSION

This study was conducted in order to obtain information and opinion from people about their knowledge, attitude and practices about voluntary blood donation, which can be useful in planning relevant donor recruitment and to introduce strategies for maintaining an adequate and safe blood supply.

In the present study half the males and one-third of females had no knowledge of conditions which warranted blood transfusion although nearly 80% believed that blood transfusion saves lives. In a study conducted by Hiremath at Karad in Maharashtra, 39% of males and 34% females were observed to have poor knowledge about blood transfusion.⁶ In a cross-sectional study conducted at Nigeria 46.2% of subjects were having knowledge of indications for blood transfusion.⁷ The fear that donor is likely to contact infection by donating blood was as high as 40% among both males and females. A similar proportion of subjects also had the fear that blood donation would cause weakness and loss of working days. A study conducted in Tanzania showed that the main reason for less number of voluntary blood donations was fear of HIV transmission.⁸ In a study conducted

among Australian college students, reluctance was mostly due to fear, contracting possible illness afterward and inconveniences of giving blood.⁹ However in the study by Pranjali et al 72% respondents affirmatively indicated that the donor does not get infected during the donation process.¹⁰ A Mexican study found that non- donation was mainly due to the fear of getting dizzy after blood donation. 47% males and 63% female subjects were not aware of the amount of blood withdrawn at one sitting of blood donation. This is comparable with other studies.¹⁰ In the study by Pranjali et al 56% of subjects were aware at what age one could donate blood. In comparison in the present study 58% males and 64% female subjects were not aware at what age one could donate blood. Moreover this lack of awareness was more marked in the age groups of 31 to 50 years and over 50 years in both males as well as females. 31% male subjects and 25% female subjects were aware that infections could spread from transfused blood to recipient and 30% subjects felt it is hazardous to procure blood from professional donors although less than 25% had knowledge of type of infections spread by blood transfusion. In the study by Pranjali et al 59.6% individuals felt transfused blood does not cause any infection.

In the aspect of attitudes and practice, in the present study it is observed that 35% of males have donated blood earlier, whereas among females only 21% have ever donated blood. This study had correlated well with other Indian studies. In a study by Anju Dubey et al it was seen that females accounted for only 26.37% of blood donors,¹¹ whereas in western studies an equal participation is reported among males and females.¹² However in a community based study in Karnataka there were only 10.6% subjects among 141 interviewed who had ever donated blood in the past.¹³ In the present study we observed that voluntary donation of blood was least among women below 30 years age.

Factors such as anaemia, prevalent beliefs, customs, lifestyle and multiple pregnancies could be some of the reasons for lack of participation in blood donation by women in developing countries. Numerous reasons were given by non-donor participants for not having donated blood. Most of the subjects interviewed had no reason for not donating blood which was 38% among males and 60% among women. The other reasons cited by both males and females was that no one ever asked them to give blood or due to fear. This is an indicator of a lack of a blood donation drive in the general public due to scarcity of motivational forces in their surroundings.

Sanchez et al have studied the impact of offering blood credits (blood investigations) and medical testing over other short term items for motivation of blood donors and found to be more effective (58% versus 20%) in return of the donors for repeated blood donation.¹⁴ It is however encouraging that in our study 80% males and 70% female subjects were willing for voluntary blood donation and over 80% of all the subjects interviewed were keen to motivate others for voluntary blood donation. These figures correlate well with other Indian studies where nearly 60% to 75% individuals were willing to donate blood voluntarily and also motivate others for the same.^{10,11}

CONCLUSION

In conclusion there is still a wide gap in the knowledge among general population as per the need for blood donation. A majority of people were ignorant about risks of spread of infections from blood donated by professional donors. The deficiency of knowledge about voluntary blood donation and fear of blood donation has been a major deterrent in motivation for voluntary blood donation in the society. With regards attitude women participation in voluntary blood donation has been poor in the community and most often there was no reason for not donating blood. The role of education to improve the knowledge and disperse the myths associated with voluntary blood donation as well as to allay the fears existing in the potential donors will lead to enormous benefits as most of the individuals across all age groups and gender are willing to come forward for voluntary blood donation. Education through media and at

community level by visits by blood banks and health professionals would help in motivating potential voluntary donors.

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