



## KNOWLEDGE AND ATTITUDE REGARDING BLOOD DONATION IN RURAL PUDUCHERRY, INDIA

Umakant G Shidam<sup>1</sup>, Subitha Lakshminarayanan<sup>2</sup>, Suman Saurabh<sup>3</sup>, Gautam Roy<sup>4</sup>

**Financial Support:** None declared

**Conflict of interest:** None declared

**Copy right:** The Journal retains the copyrights of this article. However, reproduction of this article in the part or total in any form is permissible with due acknowledgement of the source.

**How to cite this article:**

Shidam UG, Lakshminarayanan S, Saurabh S, Roy G. Knowledge and Attitude Regarding Blood Donation in Rural Puducherry, India. Natl J Community Med 2015; 6(1):64-8.

**Author's Affiliation:**

<sup>1</sup>Junior Resident; <sup>2</sup>Assistant Professor; <sup>3</sup>Surveillance Medical Officer (WHO); <sup>4</sup>Head and Professor, Preventive and Social Medicine, JIPMER, Pondicherry, Pondicherry

**Correspondence:**

Dr. Umakant G. Shidam  
Email: Umeshshidam85@gmail.com

**Date of Submission:** 13-12-14

**Date of Acceptance:** 13-02-15

**Date of Publication:** 31-03-15

### ABSTRACT

**Background:** Blood and blood components save lives in various conditions. In India there is a need of about 8 million units of blood per year and only one-third of this is obtained from voluntary donors. Assessment of awareness and attitude regarding blood donation will help in designing effective health education strategy to improve blood donation.

**Objectives:** To assess the knowledge and attitude regarding blood donation among individuals aged 18-60 years in rural Puducherry.

**Methods:** A cross-sectional survey using a structured and pre-tested questionnaire in the rural service area of Puducherry.

**Results:** Out of 288 respondents, 229 subjects (79.5%) were aware that blood could be donated, and only 14.8% of them knew about the correct frequency of blood donation. Around 80% of these subjects felt that the victims of road traffic accident required blood transfusion. Among those who were aware that blood could be donated, 40 subjects (17.5%) had donated blood in past. Most of them had donated blood for their relatives (55%). Among non-donors the most common reason for not donating blood was "never considered" (34.2%). However, three fourth of the non-donors have shown their willingness to donate blood in future. Electronic and print media were found to be the most common source of knowledge.

**Conclusion:** Though the awareness regarding blood donation was high, the practice of voluntary blood donation was remarkably low. Education and motivation through various media is recommended to eliminate misbeliefs and to reinforce positive attitudes towards blood donation.

**Keywords:** Blood donation, Knowledge, Attitude, Blood donor

### INTRODUCTION

Blood is universally recognized as the most precious element that sustains life. It saves innumerable lives across the world in a variety of conditions.<sup>1</sup> In spite of extensive efforts and a

number of blood donation programs being organized worldwide; the availability of blood still remains short to meet the increased demand for it. The WHO advocates that 3%-5% of the population should donate blood every year; this would be the ideal rate for maintaining a coun-

try's stock of blood and blood products at acceptable level.<sup>2</sup> Unfortunately, 83% of the global population who live in developing countries have access to only 40% of blood supplied, and this blood in 60% of cases is collected from paid or replacement blood donors rather than from voluntary, non-remunerated low risk donors.<sup>3</sup> While there is a need of about 8.5 million units of blood annually, India is able to collect only 4.4 million units of which only about 52% are from voluntary blood donors.<sup>4</sup>

Many people in developing countries are faced with ignorance, misperceptions and fears about the blood donation process, which result in a limited number of voluntary donors.<sup>5</sup> Lack of knowledge, fear, facilities, convenience and the quality of service are common factors in people's decisions on whether to donate blood repeatedly on a voluntary basis.<sup>6</sup> Indeed, understanding blood donors motivations is crucial to improve the effectiveness of donor recruitment and retention programmes.<sup>7</sup> This information would be helpful in planning for a programmes and campaigns in order to recruit more people as regular, non-remunerated, voluntary donors as they are low risk donors.

It is reported that there are still many misguided attitudes about blood donation among the people, especially people in rural areas.<sup>8</sup> Keeping these facts in mind, the knowledge and attitude about blood donation among individuals aged 18-60 years in rural Puducherry was studied.

## MATERIAL AND METHODS

**Study setting:** The cross sectional study was carried out in the month of January 2013 in rural service area of Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Pondicherry in South India. The service area comprised of four villages - Ramnathpuram, Thondamanatham, Thuthipet and Pillayarkuppam. Populations in the age category between 18 to 60 years residing in these four villages were included in the study.

Sample size for this study was calculated to be 278, based on 77.6 % prevalence<sup>9</sup> of knowledge and 5 % absolute precision. The number of subjects selected from each village was proportionate to the population. The lists of the households were taken from 'Enumeration Register' available in Rural Health and Training Centre under JIPMER institute. Households were selected by a systematic random sampling from each village.

Only one eligible individual was selected randomly from each household. If the designated house was locked during the visit, household members in the next house were considered as study subjects. The study was approved by an expert committee from the department. Informed consent was taken from the subjects for participation in this study.

**Data collection:** Data was collected through house visits and subjects were interviewed, after obtaining informed consent, using a pretested questionnaire. Socio-demographic information related to age, sex, education, etc. was collected. Socio-economic status was assessed, based on the modified BG Prasad classification (year 2013) scale. Knowledge on blood donation, perception regarding barriers to blood donation and blood donation by the participants in the past were also collected. For purposes of this study, people who had previously donated blood either on a voluntary basis or as a replacement donor were labeled as "donor"; people who had never donated blood at any time in the past were labeled as "non-donors".

**Data analysis:** Data was entered in Microsoft Excel and analyzed using SPSS (Statistical Package for Social Sciences) 21 programme. Data are expressed as mean, Standard deviation and percentages. Chi square test was applied to find the association of attitude with voluntary blood donations.

## RESULTS

A total of 288 respondents [162 males (56.2%) and 126 females (43.8%)] were interviewed. The socio-demographic profile of the participants is shown in Table 1. The mean age of study participants was  $36.08 \pm 11.4$  (male  $36.1 \pm 11.3$  years, female  $35.9 \pm 11.5$  years). Around 40% of the subjects were educated up to high school and higher secondary level. Around two-third of the subjects belonged to socio-economic status of IV or V.

**Knowledge about blood donation:** Totally 229 (79.5%) subjects were aware that blood could be donated. Among those who were aware that blood could be donated, only 34 (14.8%) knew about the correct frequency of blood donation i.e. around four months (once in three months for men and four months for women<sup>10</sup>, while 45 (19.7%) and 51 (22.3%) participants responded that blood donation should be done once in a six month and once in a year respectively.

**Table 1: Demographic characteristics of study participants (n=288)**

Characteristics	Subjects (%)
<b>Age</b>	
18-30	120 (41.7)
31-40	73 (25.3)
41-50	59 (20.5)
>50	36 (12.5)
<b>Gender</b>	
Male	162 (56.2)
Female	126 (43.8)
<b>Marital Status</b>	
Unmarried	225 (78.1)
Married	58 (20.1)
Widow/Widower	5 (1.7)
<b>Education</b>	
Illiterate	28 (9.7)
Primary school	60 (20.8)
Middle school	54 (18.8)
High school	72 (25)
Higher secondary	41 (14.2)
Under graduation	31 (10.8)
Post-graduation	2 (0.7)
<b>Socio-economic status*</b>	
I	3 (1.0)
II	33 (11.5)
III	43 (14.9)
IV	115 (39.9)
V	94 (32.6)

\*Modified Prasad Classification 2013

**Table 2: Knowledge about Blood Donation among the study population\* (n=229)**

Category	Subjects(%)
<b>Frequency of blood donation</b>	
≤4 month	36 (15.7)
> 4 month	101 (44.1)
Don't know	92 (40.2)
<b>Indication of blood donation (multiple response)</b>	
Accidents	184 (80.3)
During surgery	79 (34.5)
Anaemia	41 (17.9)
Don't know	20 (8.7)
Others (Dengue, Senility, Pregnancy)	6 (2.6)
<b>Contraindication for Blood donation</b>	
Anaemia	50 (21.8)
Pregnancy	30 (13.1)
Lactation	13 (5.7)
Menstruation	19 (8.3)
Malaria within 6 month	19 (8.3)
STD/HIV	60 (26.2)
Diabetes	31 (13.5)
Hypertension	14 (6.1)
Alcohol	29 (12.7)
Ill-health	34 (14.8)
Fever	7 (3.1)
<b>Source of information</b>	
Media	110 (48)
Health worker	45 (19.7)
Relatives	30 (13.1)
Friends	30 (13.1)

Around 80% of these subjects responded that the victims of road traffic accident required blood transfusion. The other conditions requiring blood transfusion as perceived by the respondents is shown in Table 2. Almost all respondents were aware about the conditions in which blood should not be donated - HIV and sexually transmitted diseases (26.2%) and anaemia (21.8%) were the common responses. Electronic and print media, followed by health workers were found to be the most common source of knowledge regarding blood donation (48% and 20% respectively). Knowledge regarding blood donation is depicted in Table 2.

**Attitude and Practice towards blood donation:**

In the present study, 40 subjects (17.5%) had donated blood in the past, mostly of them had donated blood for their relatives (55%, n=22) for replacement during surgery while others had donated either voluntarily (45%) or for friends (20%). Health workers played a crucial role in motivating these subjects to donate blood (62.5%).

In this study, the reasons as to why people have not considered blood donation any time in the past were also explored.

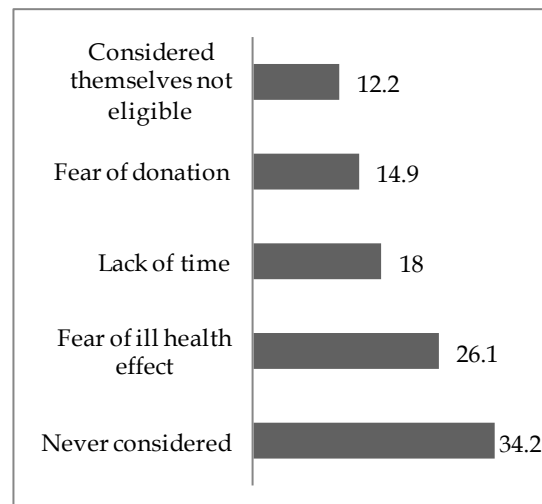


Figure expressed in percentage; \*Multiple responses of participants

**Figure 1: Reasons for not donating blood among study population\* (n= 189)**

Nearly 34% had never considered blood donation in the past, as there was never an opportunity for them. One fourth (26.1%) of non-donors felt that blood donation may affect one's own health. "Lack of time", "fear of donation" and subjects considering themselves as unfit for donation were the other reasons elicited. However

three-fourths of non-donors in this study (n=145) were willing to donate blood in future. The various reasons for not donating blood have shown in figure 1.

**Table 3: Association of socio-demographic variables with knowledge regarding blood donation - Multivariate analysis**

Variable	Odds ratio (95 % CI)	P value
Education status*		
Low	2.88 (1.57 - 5.29)	0.01
High	Ref	
Socioeconomic status**		
Low	6.02 (2.08 - 17.40)	0.01
High	Ref	

\* Low education- illiterate and primary school, High education- middle school to post-graduation

\*\*Low socioeconomic status- class IV and V, High socioeconomic status- class I to Class III

Low education status (OR = 2.88, 95% CI 1.57 - 5.29) and low socioeconomic status (OR = 6.02, 95% CI 2.08 - 17.40) were found to be associated with poor knowledge regarding blood donation [Table 3]. Around 90% of the donors were educated upto graduation level and this association was found to be statistically significant (Chi-square=5.748, p=0.017).

## DISCUSSION

It is essential to understand the various factors that could change the perception and awareness about blood donation among the rural population. Such studies may be useful for the successful implementation of Voluntary Blood Donation program and to introduce strategies for maintaining an adequate and safe blood supply.

On analyzing the socio-demographic data, it was seen that male and female were accounted for 56.2 % and 43.8% respectively in the present study. Almost equal participation was reported from the study conducted in Nigeria.<sup>11</sup>

We found that the majority of respondents were aware that blood could be donated (79.5%), but it wasn't translated into the practice of donating blood in 82.5% of our participants. A similar finding was observed in the study conducted among youngsters in Sikkim by Shenga et al.<sup>12</sup> where 87.3% participants had never donated blood. Therefore this finding would suggest that greater knowledge regarding blood donation does not necessarily lead to actual practice of blood donation, may be because of wrong perception about blood donation held by people.

The present study also revealed that only 14.5% of the subjects knew correct interval between blood donation for men and women.

While most of the study subjects had never considered donating blood, fear of ill health and lack of time were the other reasons for not having donated blood in the past. Other studies have reported fear, lack of awareness, false beliefs and religious traditions as the main reasons for not donating blood (Boulware et al.<sup>13</sup> 2002; Glynn et al.<sup>14</sup> 2003; Olaiya et al.<sup>15</sup> 2004). In our study, the donor population was predominantly characterized by young donors who were in the age group of 18-30 years, which was similar to the findings of the studies which were done by Uma S et al.<sup>16</sup> On analyzing the practice of blood donation, we found that only 17.5% participants donated blood in past which was exactly similar to that of a study from Mmbatho where only 17.5% of the high school students had ever donated blood.<sup>17</sup> The results of the present study also revealed that more males (65%) had donated blood in their past as compare to female (35%). Similar findings were also found in other studies.<sup>11,18</sup> In the present study the proportion of voluntary donation (45%) was lower than the national average of 61%. However these findings are comparable with study conducted in Sikkim in 2004 where voluntary blood donation was 46%.<sup>12</sup> Similarly, 75% of blood donors donated blood for their relatives or friends. This response reflects a situation in which blood is donated largely for relatives in need on replacement basis and implies that donation for any other reason (altruism) is a low priority. In present study only 23 (57.5%) donated blood once. Globally, it has been found that 80% of first time donors every year give up the practice of blood donation.

The present study showed positive attitude of people (77%) to donate blood in future if somebody approached to do it, or they were informed of somebody's vital need for their blood in case of emergency like road traffic accident. Similar results have shown in some other research studies.<sup>15,19</sup> This suggest that an emergency condition could be one of the motivating factors to mobilize prospective donors in voluntary donation programme in such circumstances. The above reasons should be taken into consideration when developing donor recruitment programs.

The significant finding of our study was related to health and emergency condition in which blood could be donated. It was seen that about 80% respondent were aware that victim of road

traffic accident needs blood transfusion whereas in response to the question about health condition by which blood donation could be contraindicated, most of the respondent were stated that the individual with HIV or STDs and anemia could not be donate blood.

Electronic and print media had great influential role in awareness of blood donation in our study. From this, it seems that use of such means of information are required to improve one's knowledge, attitude and thereby to increase performance of the society. This finding also reflected from NACO's recent efforts of using this media for disseminating information and emphasizing the importance of voluntary blood donation.<sup>10</sup>

## CONCLUSION

The findings of this research revealed that although study participant has good knowledge of blood donation, only a few of them had donated blood in past. It was found that education level was one important factor that determines people's awareness and attitude. We also observed that education status of the individuals affects the actual practice towards blood donation. Therefore, health education on blood donation in rural areas is most essential. Education and motivation through various media is recommended to eliminate misbeliefs and to reinforce positive attitudes towards blood donation. Periodic awareness program on voluntary blood donation is also needed for even among health worker to motivate people.

**Acknowledgement:** We would like to acknowledge help of Dr. Aswin, Dr. Dharanipriya, Dr. Anupriya, Dr. Dinesh, Dr. Mohsina, Dr Vijitha, Dr. Chanchal, Dr. Shekhar & Dr. Dasukulang for their contribution in data collection.

## REFERENCES

- Sharma R, Madan N, Venkatesh S, Ichhpujani RL, Lal S. Factors Influencing Blood Donations and the Rational Use of Blood. *J Commun. Dis* 2010;42:185-90.
- Zago A, Silveira M.F, Dumith C.S. Blood donation prevalence and associated factors in Pelotas, Southern Brazil. *Rev Saudi Publica* 2010;44:112-20.
- Mitra K, Mandal P.K, Nandy S, Roy R, Joardar G.K, Mishra R. A study on awareness and perceptions regarding blood safety and blood donation among Health care providers in a Teaching Hospital of Calcutta. *Ind J of Comm Med* 2001;26:21-6.
- National AIDS Control Organization: Services for Prevention/ Access to Safe blood. Available at: [http://naco.gov.in/NACO/National\\_AIDS\\_Control\\_Program/Services\\_for\\_Prevention/Access\\_to\\_Safe\\_blood/Accessed\\_march\\_8th\\_2014](http://naco.gov.in/NACO/National_AIDS_Control_Program/Services_for_Prevention/Access_to_Safe_blood/Accessed_march_8th_2014).
- Dubey A, Sonker A, Chaurasia R, Chaudhary R. Knowledge, attitude & beliefs of people in North India regarding blood donation. *Blood Transfus* 2012;20:1-7.
- Gutiérrez MG, de Tejada ES, Cruz JR. A study of sociocultural factors related to voluntary blood donation in the Americas. *Rev Panam Salud Publica* 2003;13:85-90.
- Glynn SA, Kleinman SH, Schreiber GB, Zuck T, Combs SM, Bethel J et al. Motivations to donate blood: demographic comparisons. *Transfusion* 2002;42: 216-25.
- Wiwanitkit V. A study on attitude towards blood donation among people in a rural district, Thailand. *Southeast Asian J Trop Med Public Health* 2000;31:609-11.
- Singh B, Pandey RM, D'Souza N, Anushyanthan A, Krishna V, Gupta V, et al. Knowledge, Attitude and Socio-Demographic Factors Differentiating Blood Donors From Non-Donors in an Urban Slum of Delhi. *Indian J Community Med* 2002; 27:118-23.
- Voluntary Blood Donation Programme-An Operational Guideline. National AIDS Control Organization, Ministry of Health and Family Welfare, Government of India, New Delhi. 2007.
- Salaudeen AG, Odeh E. Knowledge and behavior towards voluntary blood donation among students of a tertiary institution in Nigeria. *Niger J Clin Pract* 2011;14:303-7.
- Shenga N, Pal R, Sengupta S. Behavior disparities towards blood donation in Sikkim, India. *Asian J Transfus Sci* 2008;2:56-60.
- Boulware LE, Ratner LE, Ness PM, Cooper LA, Campbell-Lee S, La Veist TA et al. The contribution of socio-demographic, medical, attitudinal factors to blood donation among the general public. *Transfusion* 2002;42:669-78.
- Glynn SA, Williams AE, Nass CC, Bethel J, Kessler D, Scott EP et al. Attitude towards blood donation incentives in the United States: implications for donor recruitment. *Transfusion* 2003;43:7-16.
- Olaiya MA, Alakija W, Ajala A, Olatunji RO. Knowledge, attitudes, beliefs and motivations towards blood donation among blood donors in Lagos, Nigeria *transfus Med* 2004;14:13-7.
- Uma S, Arun R, Arumugam P. The Knowledge, Attitude and Practice Towards Blood Donation Among Voluntary Blood Donors in Chennai. *J Clin Diagn Res* 2013;7:1043-6
- Mwaba K, Keikelame MJ. Blood donation behavior and belief among a sample of high school students in Mmabatho. *Curationis* 1995;18:2-3.
- Mullah F, Kumar D, Antani D, Gupta M. Study of Knowledge, Perceptions and Practices Related to Blood Donation Among the Healthcare Support Staff of a Tertiary Care Hospital in Gujarat, India. *J Health Allied Scs* 2013;12:2.
- Ndroulaki Z, Merkouris A, Tsouras C, Androulakis M. Knowledge and Attitude Towards Voluntary Blood Donation Among A Sample of Students In TEI Of Crete, Greece. *Nurs Web J*. 2005;23.