

# The Knowledge, Attitude and Practice Towards Blood Donation Among Voluntary Blood Donors in Chennai, India

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## ABSTRACT

**Introduction:** An integrated strategy for blood safety is required for the provision of safe and adequate blood. Recruiting a sufficient number of safe blood donors is an emerging challenge. The shortage of blood in India is due to an increase in the demand, with fewer voluntary blood donors. A study on the knowledge, attitude and the practice of donors may prove to be useful in the successful implementation of the blood donation programme. Our aim was to find the level of the knowledge, attitude and practice of blood donation among voluntary blood donors.

**Material and Methods:** A structured questionnaire was given to 530 voluntary blood donors to assess their knowledge, attitude and practice with respect to blood donations. The statistical analyses were done by using the SPSS software. The

associations between the demographic factors were analysed by using the Chi square test.

**Results:** Among the 530 donors, 436 (93%) were males and 36 (7%) were female donors. 273 (51.2%) donors knew about the interval of the donation and 421 (79.4%) donors knew about the age limit for the donation. 305 (57%) donors felt that creating an opportunity for the donation was an important factor for motivating the blood donation and 292 (55%) donors felt that the fear of pain was the main reason for the hesitation of the donors in coming forward to donate blood.

**Conclusion:** A majority of the donors were willing to be regular donors. The donors showed positive effects like a sense of satisfaction after the donation. Creating an opportunity for blood donation by conducting many blood donation camps may increase the voluntary blood donations.

**Key Words:** Blood donation, Knowledge, Motivation, Voluntary donors

## INTRODUCTION

Blood transfusion is an important concern for the society, as it is life saving for patients with bleeding disorders, accidents, surgeries, inherited/acquired haematological diseases and malignancies [1]. Voluntary, non remunerated blood donors are the cornerstone of a safe adequate supply of blood and blood components [2]. The task of recruiting voluntary blood donors remains one of the major challenges for any blood transfusion service [3].

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. In addition to this, the blood centres find it difficult to recruit new donors and to retain them for arranging a regular blood supply for needy people. Consequently, the blood services need 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 [4].

One of the objectives of the National Blood Policy is to encourage research and development in the field of Transfusion Medicine. One of its strategies is to take the appropriate decision and/or to introduce policy initiatives on the basis of the factual information, the operational research on various aspects such as transfusion transmissible diseases, the Knowledge, Attitude and Practice (KAP) among donors, the clinical use of blood, etc [1]. A study on the knowledge, attitude and the practice of the donors may prove to be useful in the successful implementation of the blood donation programme. So far, no literature is available in our state on the knowledge, attitude and the practice (KAP) of blood donors. Our aim was to find the level of the knowledge, attitude and the

practice of blood donation among voluntary blood donors and to find the association between the demographic factors.

## MATERIALS AND METHODS

A structured questionnaire was prepared to assess the knowledge, attitude and the practice of blood donation. By using a self administered questionnaire, the donors' knowledge on the eligibility criteria of the blood donation, their attitudes and intentions with respect to the first time and regular donations and the impact of the donations, were evaluated, along with the demographic details. All the study details were explained to the donors and then the questionnaires were given to them, after getting the consent of each donor. This cross sectional study was conducted on the donors who donated blood in the blood donation camps which were conducted by the Department of Transfusion Medicine, The Tamilnadu Dr. M.G.R Medical University, Chennai, Tamil Nadu, India. All donors were selected as per the eligibility criteria of the Drugs and Cosmetics Act. A total of 530 voluntary blood donors were selected by the cluster sampling technique, where the total Chennai area was divided into four clusters as per the geographical zone. A simple random sampling from each cluster was done in four zones of Chennai, wherein four camps were conducted in each zone and from each camp, 33 donors were selected randomly to prevent a bias. So, in Zone 1, 33 donors were selected from camp 1 and 33 donors were selected from camp 2 and so on, in other zones too, similarly. The statistical analyses were done by using the SPSS software. The associations between the demographic factors were analyzed by using the Chi square test by using categorical data. The study was approved by the Ethical Committee of the institution.

## RESULTS

Among the 530 donors, 436 (93%) were males and 36 (7%) were female donors. The age distribution, educational status, occupation, marital status and the socioeconomic status of the study population have been shown in [Table/Fig-1]. Of the 530 donors, 245 (46.1%) donors were first time donors and for 396 (74.9%) donors, the age of the first donation was between 18-25 years [Table/Fig-2].

The knowledge on the blood donation has been stated in [Table/Fig-3], which shows that 273 (51.2%) donors knew that people could donate once in three months and 421 (79.4%) donors knew that the blood donation could be started at 18 years of age. As there was a vast awareness on HIV, 527 (99.4%) donors stated that HIV patients could not donate blood. Two hundred and seventy five (52%) donors did not know the prerequisite haemoglobin level for the blood donation and 349 (65 %) donors did not know about the mandatory tests which were done on the donated blood.

The attitude towards the blood donation has been shown in [Table/Fig-4], which shows that 305 (57%) donors felt that creating an opportunity for the donation was an important factor for motivating the blood donation and 292 (55%) donors felt that the fear of pain was the main reason for the hesitation of the donors in donating blood.

The practice of the donors has been shown in [Table/Fig-5], which shows that 250 (47.2%) donors mentioned that the reason for their first time donation was that they had done it for their friends/relatives. Two hundred and fifty two (47.8%) donors which included first time donors were willing to become regular donors and they were ready to donate blood once in a year. Three hundred and ninety six (74.7%) donors had a feeling of satisfaction after the blood donation.

Two hundred and ninety three (55.2%) donors felt that through multiple channels like media, posters and banners, they could disseminate the message of voluntary blood donation among the people, to increase the awareness on voluntary blood donations.

The associations between education and the variables like the knowledge on the quantity of the blood donation, the mandatory tests which are done on the donated blood, the age of starting the donation, the knowledge on the HIV patients who donated blood, the haemoglobin level which was required to donate blood and

	Variables	No. of Donors	Percentage (%)
Age in years	18-25	325	61.3
	26-35	154	29.0
	36-45	43	8.1
	46-55	8	1.6
Educational Status	Illiterate	0	0
	High School/ Higher Secondary	111	20.8
	Graduate	318	60.3
	Post Graduate	101	18.9
Occupation	Employed	365	68.9
	Unemployed	3	0.6
	Students	162	30.5
Socio-economic status	Low	119	22.45
	Middle	216	40.75
	High	195	36.70

[Table/Fig-1]: Demographic details of the donor

the reasons for the hesitation of the people in donating blood were statistically significant, since the p value was 0.001 .

The association between occupation and the variables like the knowledge on the haemoglobin level which was required to donate blood was statistically significant, as the p value was 0.015. The associations with other variables were not statistically significant, as the p value was > 0.05.

	Variables	No. of Donors	Percentage (%)
Number of Donation	First time	245	46.1
	2-10 times	261	51.9
	11-20 times	23	1.8
	>20 times	1	0.2
Age of 1 <sup>st</sup> donation (in years)	18-25	396	74.9
	26-35	111	19.0
	36-45	23	6.1

[Table/Fig-2]: Donor Donation details

	Variables	No. of Donors	Percentage (%)
Knowledge about donation intervals	Every 3 months	273	51.2
	Every 6 months	158	29.6
	Once in a year	19	3.6
	Don't Know	80	15.6
Age to start blood donation	18 years	421	79.4
	Don't Know	109	20.6
Can HIV person donate blood	Yes	0	0
	No	527	99.4
	Don't Know	3	0.6
Required Hb level to donate blood	11.5 gram %	40	7.5
	12.5 gram %	215	40.5
	Don't know	275	52.0
Mandatory test done on donated blood	Know	181	34.2
	Don't know	349	65.8
Volume of blood donated	250 ml	101	19.1
	350 ml	113	21.0
	450 ml	101	19.1
	Don't know	215	40.5

[Table/Fig-3]: Knowledge about blood donation

	Variables	No. of Donors	Percentage (%)
Factors motivating blood donation	Creating opportunity	305	57.7
	Asking personally to donate	155	29.2
	Information about need of blood	60	11.3
	Others	10	1.8
Reason for not donating blood	Fear of Pain	292	55
	No opportunity	106	20
	Didn't think of it	61	12.5
	Others	61	12.5
Best way to disseminate message	Personal request	104	20
	Radio/TV	88	16
	Printing/Banners	45	8.8
	Multiple	293	55.2

[Table/Fig-4]: Attitude towards blood donation

	Variables	No. of Donors	Percentage (%)
Reason for donating for the 1 <sup>st</sup> time	For friends/relatives	250	47.2
	Voluntarily	232	44.9
	Others	42	9.9
Willing to become regular donor	Yes	527	99.4
	No	0	0
	Don't know	3	0.6
If yes, time Interval for regular donation	Yearly once	254	47.8
	Every 6 months	181	34.3
	Every 4 months	45	8.5
	Others	47	8.8
Impact of blood donation	Satisfaction	396	74.7
	Generally better	65	12.2
	Relaxation/Alertness	21	3.9
	Tired/Fatigue	9	1.7
	Numbness	7	1.5
	Fear	2	0.4
	Mixed feelings	30	5.2

**[Table/Fig-5]:** Practice of blood donation

The association between the age of the donor and the variables like the knowledge on the haemoglobin level which was required for the donation, the benefits of the donation and the impact of the blood donation were statistically significant ( $p$  value=0.032). The other variables like the mandatory tests which were done were not statistically significant, as the  $p$  value was  $>0.05$ .

The socio economic status did not have any statistically significant association with all the variables ( $p>0.05$ ).

## DISCUSSION

In the demographic data of our donors, female donors were found to be very few in number as compared to males, which was similar to the findings of a study which was done by Gillespie et al., [5]. The reasons for the less percentage of female donors could be a low donor turnover and temporary deferral conditions like low haemoglobin values, low weight, and fear of pain. In a study which was done by Hollingsworth, female donors constituted only 1% of the donor population [6].

In our study, the donor population was characterized by increased numbers of young donors who were in the age group of 18-25 years, with college level education, which was similar to the findings of the studies which were done by Allain et al., [7] and Hinrich et al., [8]. In contrast, Sampath et al., showed that 48.4% of the donors were in the age group of 26-50 years [9].

Out of the 530 donors, 46% of the donors had donated blood for the first time, since most of them were college students. This was similar to the findings of the study which was done by Olaiya et al., [10], whereas Zaller et al's [11] study showed that only 17.5% of the donors were first time donors.

28.1% donors donated twice, 7.4% donors donated 4-10 times and only 0.2% donors donated more than 25 times. The reasons for their hesitation in donating blood so far, was that they had 'never been asked' and that they 'didn't know that blood donation was necessary'. Though first time donors are important for the recruitment strategy, their high dropout rates underscore the need

to address the factors which are related to the retention of the donors.

Our study results showed that 50% of our donors had good knowledge about the eligibility criteria, as in the study of Lischen et al., [12]. There was a lack of knowledge among our donors with regards to the mandatory tests which were done after the blood collection, the amount of blood which was donated, and whether people could get infected by receiving blood. So, to create awareness, a clear simple and constant message must be delivered by using health education materials to the target groups.

The attitude of our donors was favourable in their perception that blood donation would not harm their body (74%). The general opinion of the blood donors (57.5%) was that creating an opportunity for blood donation would play an important role in motivating them to donate blood. They (99.2%) also emphasized that voluntary donation was the best option as compared to the other donations, which was concordant with the findings of the study which was done by Olaiya et al., [10]. The donors also mentioned that the main reason for their hesitation in donating blood was the fear of pain (55%), which were similar to the findings of a study which was done by Olaiya et al., [10]. The donors were aware that they could donate blood once in three months (51.2%). 47% of the donor population were willing to donate once in a year and 34.3% donors were willing to donate once in six months. 47.2% of our surveyed donors had donated blood for the sake of their friends/ relatives during their first donation, which was similar to the findings of the study which was done by Sojka et al., [13].

With regards to the impact of the blood donation, 74.7% of the donors showed positive effects like a feeling of satisfaction after the donation and 3.4% of the donors showed negative effects like dizziness, numbness and tiredness. This was similar to the findings of the study which was done by Sojka et al., [13]. Mixed effects were reported by 6.82% of the donors. In contrast, a study which was done by Hinrichs et al., stated that 26.5% donors reported positive effects such as feeling happy and alert, feeling relaxed, etc, 17.6% reported mixed effects and 23.5% reported negative effects [8].

## CONCLUSION

Most of the donors in the study group opined that the motivating factors for the recruitment of more donors were, creation of opportunities to donate and the need to be well-informed about the need of blood. A majority of the donors were willing to be regular donors. The donors showed positive effects like a sense of satisfaction after the donation. In our study, most of the donors were knowledgeable about the blood donation and they had a good attitude towards it; however, they felt comfortable in donating blood once a year. If this feel good factor of a once a year donation could be changed into atleast twice a year, the gap between the demand and the supply of the country could be narrowed down. Creating opportunities for blood donations by conducting many blood donation camps may provide a solution for our blood demand.

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**FINANCIAL OR OTHER COMPETING INTERESTS:**

None.

Date of Submission: **Jul 17, 2012**  
Date of Peer Review: **Jan 3, 2012**  
Date of Acceptance: **Mar 21, 2013**  
Date of Publishing: **Jun 01, 2013**