



## A study to assess the Knowledge, Aptitude and Practices towards Voluntary Blood Donation in a Peripheral Hospital in North India

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**Abstract:** Donated blood is a lifeline in an emergency and for people who need long term treatment. Adequate and safe blood transfusion is still a challenge in a developing countries like ours. There is a precarious need to put efforts to recruit donors in groups less willing to donate and simultaneously reinforce the positive behaviour of willing groups converting previous donors into regular practice.

**Keywords:** Knowledge, Aptitude, Practice, voluntary.

## INTRODUCTION

### Healthy citizens are true reflection of a healthy nation

Blood transfusion facilities are a vital aspect of comprehensive health care programme for any country. Worldwide 112.5 million units of donated blood are collected annually. High income countries contribute to almost 47% of the entire blood donation. The average blood donation rate in high income countries is estimated to be 9 times higher than what is collected in lower income countries. According to World Health Organisation (WHO), only 1% Indian population donates blood annually leading to an annual deficit of 2 million blood units. Three precious lives can be saved with one donation. Human blood, under section 2(b) of Drugs and Cosmetic Act, is covered under the definition of "Drugs" as it is used in the treatment of many diseases.

Recent advances in transfusion medicine have made available blood components catering for patient centered specific therapies. Despite extensive research in the field of transfusion medicine, a true substitute of blood and its components has not yet been found which makes blood donation vital to save lives. A developing country like ours faces challenges not only in maintaining an adequate blood donor recipient ratio but also in disseminating knowledge regarding safe blood transfusions (Lowe, K. C., & Ferguson, E. 2003).

Blood transfusion is often used for supportive care as in various emergencies and surgeries which helps in saving lives of individuals who suffer massive blood losses from trauma related injuries, pregnancy related complications, malignancies, severe anaemia and other medical and haematological conditions (Nwogoh, B. *et al.*, 2011). Individuals who voluntarily donate blood are the safest donors. They are aware of all the risks attributing to adverse health effects to the recipients in case they don't fulfil the blood donor selection criteria (Buyx, A. M. (2009); & <http://www.who.int>).

The therapeutic benefits of transfusion must always outweigh the potential risks to the recipients. Blood transfusion can cause acute and delayed reactions. Acute non-infectious serious hazards of transfusion include acute haemolytic reaction, febrile reaction, anaphylaxis, transfusion related acute lung injury and metabolic derangements. Delayed non-infectious serious hazards include delayed haemolytic reaction, iron overload, microchimerism, post transfusion purpura, transfusion associated graft versus host disease. Although minimal in possibility, especially after the high end laboratory investigations available these days, the transmission of one or more blood-borne viruses such as Hepatitis B, HIV etc to the recipients is one of the hazard attributed to unsafe blood transfusions.

The level of knowledge, aptitude and practice of a potential donor towards voluntary donation can help to achieve an adequate donor-recipient ratio especially in a developing country like ours especially where myths and misconceptions surrounding transfusion services are plenty.

## MATERIALS AND METHODS

A hospital based case study was undertaken on a total of 237 subjects availing laboratory and blood bank facilities at a Peripheral Hospital in North India. A written informed consent was taken from individuals who agreed to participate. A pretested, close-ended questionnaire was prepared to obtain basic information towards blood donation. The participants were in the age group of 18-55 years. The subjects who didn't consent to participate in the study were excluded and the next subject was approached on the basis of random sampling according to Kth number. The questionnaire was concised and designed to avoid non-response bias. The time taken to complete the questionnaire was less than seven minutes on an average making it easy for the subjects to contribute to the study.

### Data Quality Control

The questionnaire was pretested initially in a different sample of subjects to assure adequate quality measures to ensure appropriate data collection. Before the study was initiated; lab technicians and blood transfusion assistant were trained to collect data by the blood bank medical officer. All questionnaires were reviewed and cross-checked for completeness by the medical officer. All the necessary feedback was given to the data collectors immediately.

### Data Collection Tool

All subjects had to fill the structured questionnaire. The questionnaire comprised of four major parts. The first part was designed to measure socio-demographic data for example age, gender, rank and unit. Second, third and fourth parts were about the knowledge, attitude and practices of subjects regarding blood donation.

## RESULTS

After obtaining prior consent, the questionnaire was attempted by 237 subjects. All the respondents qualified for the study as they belonged to the pre-determined age group. There was no volunteer who was able to respond to the questionnaire with 100% accuracy. All individuals who volunteered for participating in the questionnaire were males. 36.78% participants belonged to the age group of 21-30 years. 31.80% were from first decade but more than 18 years followed by 26.43% from third decade and 4.98% were between 41-50 years.

In our study, 251(96.16%) participants were aware about their blood group. Majority of the respondents had a good knowledge about various parameters like minimum age 21 (87.2%) and weight criteria 196(75.09%) for donating blood. 240(91.95%) respondents knew that hypertensive patients cannot donate blood.

Present study showed that only 110(42.4%) knew about the adequate volume of blood collected during a blood donation process. 193(73.94%) subject correctly stated the desired duration for collecting blood during a transfusion process and 214(82.30%) participants were aware of the risk of transmission of blood-borne infections via transfusion.

The study conducted revealed that 227(86.97%) respondents were aware that the minimum gap between consecutive donations should be 3 months. Our study revealed that only 94(36.01%) were aware that the donated blood can be stored for 35 days. There were 162(62.06%) subjects who believed that donating blood will cause anaemia and only 149(57.08%) volunteers knew that each blood donation can save upto 3 lives. Our study also highlighted that 120(45.97%) respondents had a misconception that blood donation causes weakness and this in turn will render them incapable to participate in sports. The present study revealed the fact that 151(57.85%) of the respondents (who were exclusively male) believed that females cannot donate blood. In our study, 245(93.86%) respondents opted for voluntary blood donation.

## DISCUSSION

The primary responsibility of any transfusion facility is to provide healthy and knowledgeable volunteers for safe blood transfusion practices. The current donor-receiver ratio not only puts overt dependence on family members for blood replacement but also exerts extra pressure on voluntary donor to minimise the deficiency (Pink, J. *et al.*, 1994; & US Department of Health and Human Services. 2009).

In absence of true substitute of blood and its components, voluntary donation is the basis of the safest forms of blood donation for any transfusion service. To attain 100% voluntary non-remunerated blood donation by the year 2020, World Health Organization (WHO) had adopted a policy. In this regard, the statistics in many developed as well as many developing countries show a recent shift in trend from replacement donations towards voluntary blood donation but the figures are far from satisfying (Bharucha, Z.S. 2005).

In the present study, it was observed that 87% of respondents knew about the suitable age group of blood donation (18–65 years). These findings were in accordance with the studies done by Aslami *et al.*, (85%) (Aslami, A. N. *et al.*, 2015), Uma *et al.*, (79.4%) (Uma, S. *et al.*, 2013) and Chopra *et al.*, (90%) (Chopra, D., & Jauhari, N. 2015).

In our study, 86% subjects had adequate knowledge regarding minimum interval between consecutive blood donations which was in compliance with the study done by Agravat Amit *et al.*, (80%) (Amit, A. *et al.*, 2014). In contrast only 48.9% subjects in Chopra *et al.*, study and 45% subjects in Aslami *et al.*, study had adequate knowledge about minimum interval between consecutive blood donations (Uma, S. *et al.*, 2013; & Chopra, D., & Jauhari, N. 2015).

The present study revealed that 57% of the respondents were aware about number of patients that can benefit from one unit of whole blood. This percentage was not in accordance with study done by Manikandan S *et al.*, where only 22% subjects were aware about the number of patients that can be benefitted from one unit of blood (Manikandan, S. *et al.*, 2013).

In our study, 245 respondents (93%) had positive attitude towards blood donation which was similar with the studies of Agravat Amit *et al.*, (96.6%) and Nwogoh *et al.*, (89.3%) (Amit, A. *et al.*, 2014; & Nwogoh, B. *et al.*, 2013)

The misconception that blood donation can lead to anemia (34%) and weakness (71%) was found to be the main reason behind the inhibition against voluntarily donating blood in our study. This finding suggests that motivational and informative lectures should be organised frequently to eliminate misconceptions surrounding transfusion services and to encourage individuals to voluntarily donate blood.

More opportunities by organising blood donation camps should be provided to donate blood. Individuals with reluctance towards voluntary blood donation should be educated about significance and health advantages of voluntary and regular blood donation. All these efforts will help to regularise the donor-recipient ratio.

After complete analysis of the questionnaire from the study it is submitted that general awareness about knowledge regarding blood donation is more than satisfactory among individuals. However, there is still a great scope for the improvement in the attitude and practices so that they voluntarily opt for regular blood donations. Needless to emphasize, the subject and their families are potential voluntary blood donors which can prove to be source of safe blood.

Conclusion-Education programmes on voluntary blood donation must be held regularly to create a positive perception towards blood donation and to

eliminate misconceptions amongst the subject about voluntary blood donation.

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