

## Knowledge, Attitude and Practices towards Voluntary Non-Remunerated Blood Donation among Engineering Students

M. Kanmani Devi<sup>1</sup>, T. Arunkumar<sup>2</sup>

<sup>1</sup>Associate Professor, Department of Pathology, <sup>2</sup>Professor, Pediatrics Department, Karpagam faculty of medical sciences and research, Othakalmandapam Coimbatore, Tamil Nadu 641021, India.

### Corresponding Author:

**Arunkumar T**, Professor, Pediatrics Department, Karpagam faculty of medical sciences and research, Othakalmandapam Coimbatore, Tamil Nadu 641021, India.

**E-mail:** arunkfmsr@gmail.com

### Abstract

**Background:** Globally the demand for blood is increasing in day to day clinical practice but there has been a significant gap/mismatch in the demand and supply of blood. It is essential to raise awareness regarding voluntary blood donation (VBD), as blood is an essential therapeutic measure in the management of trauma, malignancies, hemtological and certain congenital disorders in the pediatric population. . The present study was carried out to evaluate the level of knowledge, attitude and practices regarding voluntary non-remunerated blood donation among engineering students.

**Methods:** This cross-sectional study was conducted over a period of 3 months among 300 Engineering college students. A three-part questionnaire on knowledge, attitude and practices was administered. Data was entered and analyzed using SPSS software.

**Results:** The level of knowledge, attitude and practices regarding voluntary blood donation was 96%, 86% and 76% respectively. There was a statistically significant difference in the level of knowledge between female and male students with male students demonstrating higher level of knowledge compared to female students ( $p < 0.05$ ).

**Conclusion:** Although the present study has shown high levels of attitude towards VBD, there exists a gap between attitude and practices, which could be influenced by poor level of knowledge. It is important to provide adequate knowledge and motivation towards nonremunerated, voluntary blood donation by creating adequate awareness across the younger population.

**Key words:** Blood transfusion; Non remunerated donors; KAP study; voluntary donation.

### How to cite this article:

M. Kanmani Devi, T. Arunkumar/Knowledge, attitude and practices towards voluntary non-remunerated blood donation among Engineering students/Indian J Pathol Res Pract. 2021;10(1):15-19.

## Introduction

Blood transfusion is an important component of health care and there is always a constant demand for blood for various clinical conditions including hematological disorders, cancer therapy, accidents, surgeries and pregnancies. The need for blood and its components is constantly on the rise all over the world. Studies reveal that around 92 million units of blood are collected globally every year by way of donations. Furthermore, it has been evidenced that about 15% of the child mortality rates in Africa are due to non-availability of blood and blood products.<sup>1</sup> In India, there is a demand of about 31 million units of blood each year.<sup>2</sup> The blood donation rates are far lower in the low and middle income countries compared to developed nations.<sup>3</sup> The World Health Organization (WHO) recommends atleast 1% of a country's population to opt for voluntary donation to meet out the demands for blood and its products.<sup>3</sup>

Blood donation has been categorized into two types voluntary non-remunerated donation and replacement donation either as donation from family member or paid donation. It has been evidenced that voluntary blood donations (VBD) are free from risk of transmission of blood borne infections like HIV and Hepatitis B. It is therefore considered as the mainstay in safe and sustainable blood transfusion. Although WHO strongly advocates for voluntary donation, it also discourages replacement donation and in countries like India with a high prevalence of replacement donation, there is a need for active efforts to encourage voluntary donation. The primary component of enhancing voluntary donation is to have an integrated network of voluntary donors and a systematic strategy to implement effective voluntary blood donation. Above all there is an imminent need for a co-ordinated national blood policy which provides a sustainable end-to-end platform.

Although there are nationwide initiatives for voluntary blood donation, the level of awareness regarding blood donation among the general population needs to be assessed. In a study among college students in Northern India, the knowledge regarding blood donation among college students was 74.5%. However, with regards to voluntary blood donation practices, the study revealed that only 22.9% have donated blood so far.<sup>4</sup> The data reveal a huge gap between knowledge and practice regarding voluntary blood donation, which reflects inadequacy in the information gathered

by the population and also the lack of appropriate attitude towards the act of voluntary donation. With WHO recommending countries to focus on achieving 100% nonremunerated voluntary blood donation among youngsters by 2020, there is a need for dynamic strategies to assess the level of awareness, attitudes and practices in order to devise and implement focused strategies aimed at bringing about behavior change through effective communication, especially among the younger generation.

## Objectives

The present study was carried out to evaluate the level of knowledge, attitude and practices regarding voluntary blood donation among college students.

## Methodology

### *Study setting and participants*

The present study was carried out among college students by the Department of Pathology of our tertiary teaching institution for a period of three months between August and October 2019. The study participants consisted of Engineering college students aged between 19 and 23 years.

### *Sample size and sampling*

Based on intensive literature review, the prevalence of knowledge regarding voluntary blood donation among college students in India was 74.5%. [4] At 95% confidence limits and 7% relative precision, the sample size derived was 268. Accounting 10% for non-response, the sample size was calculated as 295 and rounded off to 300.

There are three colleges situated in the field practice area of the tertiary teaching institution. All the institutions were approached to obtain permission to conduct the study. Out of the three institutions, only one institution consented. From the total list of students studying in the college, the required sample of participants were selected by simple random sampling using computer generated random numbers.

### *Ethical approval and informed consent*

Approval was obtained from the Institutional Ethics Committee prior to the commencement of the study. Written permissions were obtained from the Engineering college authorities to conduct the study. Each participant was explained in detail about the study and informed consent was obtained prior to the data collection.

**Results**

The present study was carried out among 300 engineering college students regarding the KAP of VBD. Majority of the participants were males (82%). (figure 1)The level of knowledge regarding VBD was evaluated on various aspects.

**Table1:** Level of knowledge among the study participants.

S.no	Characteristics	Male		Female	
		Count	Percentage (N=246)	Count	Percentage (N=42)
1	Infectious diseases through transmission	64	26.02	12	28.57
2	Hypertension or Diabetic can donate blood	61	24.80	10	23.81
3	There is no gender differentiation in donation	61	24.80	10	23.81
4	Aware of their blood grouping	20	8.13	3	7.14
5	Purpose of blood transfusion	28	11.38	3	7.14
6	Screening test is required prior to transfusion	28	11.38	3	7.14
7	Donor benefits from transfusion	14	5.69	3	7.14
8	Importance of donation is known	14	5.69	2	4.76
9	Criteria for unfit donor is known	26	10.57	2	4.76
10	Basic criteria for donation	28	11.38	2	4.76
11	Alcoholic can/ cannot donate	12	4.88	3	7.14
12	Smokers can/ cannot donate	14	5.69	3	7.14
13	Time duration for the entire process	10	4.07	1	2.38
14	There is no requirement for taking leave of absence from work	10	4.07	1	2.38

Majority of the participants (26%) of the males and 28.6% of the females were aware of the infections transmitted through blood transfusion. However the basic criteria for selection of a donor was known only among 11.4% of the males and 4.8%

of the females (Table 1). The level of attitude towards VBD was evaluated and it was observed that 22.8% of the male participants were willing for donation in the future while 14.3% of female participant were willing for donation in the future and also felt that blood donation is a part of social responsibility. (table 2) with regards to the practice of blood donation, 14.6% of the males and 14.35 of the female participants have so far donated blood. (Table 3)

**Table 2:** Level of attitude among the study participants.

S no	Characteristics	Male		Female	
		Count	Percentage (N=246)	Count	Percentage (N=42)
1	I am hesitant towards donation	38	15.45	5	11.90
2	I am Willing for donation in future	56	22.76	6	14.29
3	I am Motivated for donation	54	21.95	5	11.90
4	I have a social responsibility in donation	50	20.33	6	14.29
5	I have a positive Attitude towards donation	24	9.76	6	14.29

**Table 3:** Level of practice among the study subjects.

S no.	Characteristics	Male		Female	
		Count	Percentage (N=246)	Count	Percentage (N=42)
1	Have you donated blood	36	14.63	6	14.29

**Table 4:** Overall percentage of knowledge, attitude and practices.

SI No.	Characteristics	Male Mean %	Female Mean %	Total %
1	Knowledge	30	5	17.5
2	Attitude	44	6	25
3	Practices	36	6	24

The overall prevalence of knowledge attitude and practices among the study participants revealed that overall knowledge level among the study participants was 17.5%. Majority of the participants had good attitude (25%) followed by practice (24%). The overall mean percentage was higher among the males compared to the females. (Table 4).

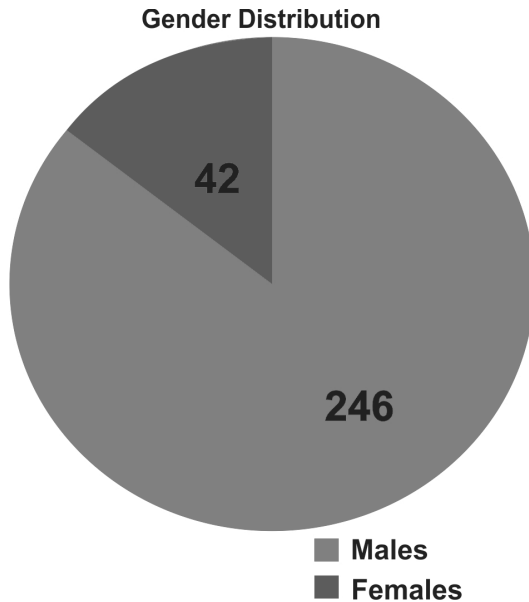


Fig. 1: Gender distribution among the study participants.

#### Data collection

A structured, pre-tested, self-administered questionnaire was used to obtain demographic data and data regarding knowledge, attitudes and practices regarding voluntary blood donation. All the questions were scored as '1' for correct response and '0' for incorrect response.

#### Data analysis

Data was entered and analyzed using SPSS version 21 software. The prevalence of knowledge, attitudes and practices (KAP) regarding voluntary blood donation was expressed in percentages. The association between level of KAP with demographic data was carried out using chi square tests. A  $p$  value  $<0.05$  was considered statistically significant.

#### Discussion

Voluntary blood donation is the mainstay in ensuring safe and sustainable supply of blood and its products in the healthcare sector. In abidance with the policy recommendations of the World Health Organization, it is important to increase the awareness and promote voluntary blood donation in the general population, especially among the youth. The single most effective tool for creating awareness and evaluating the attitudes of the Indian youth regarding voluntary blood donation is by conducting a KAP study. The present study was carried out among 300 college students enrolled in an Engineering college in Coimbatore, South India. Since most of theyouths in this geographic area predominantly take up the course of Engineering,

these students were specifically selected for the study.

Majority of the study participants were males (82%) in this study. In a study done by Mishra SK et al, majority of the participants were males (75.8%), similar to the present study. The evaluation of the level of knowledge showed that majority of the participants (26%) were aware that certain infections can be transmitted through blood. However, the awareness of their own blood groups was low (8.1% and 7.1%) among males and female participants. Moreover, the level of awareness regarding basic criteria and requirements for blood donation was also less among the study participants, especially among the female students. The overall level of knowledge/awareness regarding voluntary blood donation in the present study was (17.5%).

In a study done by Mishra SK et al, 70.2% were aware of the infections transmitted through blood, and thiswas higher compared to the present study.<sup>5</sup> The socioeconomic and literacy differences between the study populations could be the reason for this disparity. Similar findings were observed in a study done by Chauhan R et al.<sup>4</sup> The overall level of knowledge in the study done by Mishra SK et al was 47% while the same in the study done by Chauhan R et al was 74.4%, similar to the present study.<sup>4</sup> Another study done by Devi et al revealed lower levels of knowledge of 33.1% regarding voluntary blood donation.<sup>6</sup>

The attitude regarding voluntary blood donation was assessed by evaluating the level of motivation, social response and willingness to donate blood in the future. The mean level of attitude in the present study was (25%). Positive attitude towards blood donation was present in 95.7% of the participants in a study done by Chauhan R et al and the same was 72% in the study done by Mishra SK et al.<sup>4,5</sup> With regards to practices, only 14% of the study participants have donated blood voluntarily. The findings were similar to the study done by Chauhan R et al where only 22.9% of the participants have donated blood voluntarily.<sup>5</sup>

The present study has identified several gaps in the level of awareness regarding VBD. The level of awareness is largely restricted to the blood borne transmission of infections, however, most of the participants are unaware of their own blood group. This reflects on the level of awareness regarding not only VBD, but also on their individual health status. Moreover, in contrast to a high prevalence of positive attitude towards VBD, the actual prevalence of practices related to VBD is significantly low. Although the reasons are unclear,

it could be hypothesized that lack of adequate knowledge regarding the same as evidenced by low levels of knowledge (17.5%) could be the reason for low levels of practice of VBD. This indicates the widely prevalent gap between knowledge and practice and it is absolutely essential to address the fears and stigmas associated with VBD.

### Conclusion

The present study has succinctly elucidated the level of knowledge, attitudes and practices pertaining to voluntary blood donation among the youngsters, especially the college students. It is important to address this group with an intensive awareness programme, targeting not only at imparting knowledge regarding blood transfusion, but also on myths, misconceptions and taboos associated with blood donation. It is pertinent to initiate a community wide strategy for this purpose, so as to enable achievement of the World Health Organization's recommendations on VBD prevalence.

Declaration

Conflict of interest – nil

Funding –nil

Ethical approval –obtained

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