

# Assessment of Knowledge, Attitude and Practice Regarding Blood Donation among Paramedical Personnel in a Teaching Hospital, Hassan, Karnataka

Anjan Sreeranga<sup>1</sup>, Maliakel Steffi Francis<sup>2</sup>, Posima Jaisai<sup>3</sup>, Priyanka Aggarwal<sup>3</sup>

<sup>1</sup>Assistant Professor, Department of Community Medicine, Hassan Institute of Medical Sciences, Karnataka,

<sup>2</sup>Senior Resident/Tutor, Department of Community Medicine, Chamarajanagar Institute of Medical Sciences, Karnataka, <sup>3</sup>Postgraduate, Department of Community Medicine, Hassan Institute of Medical Sciences, Karnataka

## Abstract

**Background:** Voluntary, non - remunerated blood donation is the foundation for safe and sustainable blood supply. Health care providers, especially non physician personnel or paramedical personnel, play an important role in motivating and promoting blood donation as they come more in contact with public as representatives of the health system and hence need to possess a comprehensive and accurate knowledge regarding blood donation. **Methodology:** A Cross-sectional study was conducted to assess the knowledge of blood donation among 285 paramedical personnel working in Hassan institute of medical sciences, Karnataka which is a tertiary care teaching hospital. A pretested Questionnaire regarding blood donation KAP (knowledge, attitude and practice) were administered to all the paramedical personnel who consented to take part in the study after adequate sample size estimation. **Results:** More than 90% of staff had good knowledge regarding the blood groups and the eligibility criteria. 253 (88.8%) respondents considered blood donation as good and 205(71.9%) believed it was safe to donate blood but in practice only 116(40.7%) had ever donated blood. Male workers were more likely to donate blood ( $p<0.0001$ ) **Conclusion :** It was observed that although there is a reasonably good level of knowledge and positive attitude among the paramedical personnel, the practice of donating blood was not adequate, especially that of regular voluntary donation. Hence it is important to conduct sensitization programs to improve practice of blood donation and various incentives as suggested by the staff themselves and several international bodies maybe considered to promote blood donation among them.

**Keywords:** Voluntary blood donation, paramedical personnel, awareness

## Introduction

Voluntary, non - remunerated blood donation is the foundation for safe and sustainable blood supply. The World Health Organisation targets at achieving 100% voluntary non - remunerated blood donation which can be realised even in settings with limited

resources.<sup>1</sup> However it is not possible without good community participation and proper knowledge and awareness. Our country has a high demand for blood and blood components owing to the high proportion of nutritional anaemia, maternal haemorrhagic conditions, viral haemorrhagic fevers, trauma and other medical, surgical, maternal and pediatric indications.<sup>2</sup> The estimated clinical demand for blood in 2018 was 14.6 million units whereas the blood collection was 12.4 million units which indicates a significant mismatch between the demand and availability of blood in our country.<sup>2,3</sup> Although India has a large number of eligible

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### Corresponding author:

**Dr. Anjan Sreeranga**

Assistant professor, Department of community medicine, Hassan institute of medical sciences, Hassan, Karnataka. Email: anjusiri25@gmail.com

population (425 million) for blood donation, only a small proportion actually donates.<sup>2</sup> Against a requirement of voluntary blood donation of 34.3 per thousand eligible population only 31.9 per thousand eligible population had donated.<sup>2,3</sup> This may be due to misconceptions or lack of awareness regarding blood donation.<sup>4</sup>

Health care providers, especially non physician personnel or paramedical personnel, play an important role in motivating and promoting blood donation as they come more in contact with public as representatives of the health system and hence need to possess a comprehensive and accurate knowledge regarding blood donation.<sup>5</sup> This study is intended to assess the knowledge, attitude and practice regarding blood donation among paramedical personnel and to promote awareness about blood donation and blood safety and achieve the missed target of 100% voluntary blood donation by 2020.

### **Study Objectives:**

The objectives of this study were to assess the knowledge, attitude and, practice of voluntary blood donation among paramedical personnel, to identify and recruit potential voluntary blood donors and to determine the association between blood donation, gender and category of staff.

### **Methodology**

A Cross-sectional descriptive study was conducted to assess the knowledge of blood donation among all paramedical personnel working in Hassan institute of medical sciences, Karnataka which is a tertiary care teaching hospital with a large functioning blood bank. The study subjects included the nurses, laboratory technicians, X-ray technicians, OT technicians and pharmacists. All physicians and house surgeons working in the institute were excluded. The nature of the study and information needed was explained and oral consent was taken from those willing to participate in the study. A pretested Questionnaire regarding blood donation KAP (knowledge, attitude and practice) were administered to all the paramedical personnel who consented to take part in the study. The questions were designed to evaluate the responder's knowledge and awareness regarding blood

donation. A total of 285 respondents were included in the study after sample size estimation.

### **Sample size estimation:**

As the objective of the study was to increase the practice of blood donation, proportion of those who did not practice blood donation was taken. As per Mullah F et al study on healthcare personnel, 61% did not practice blood donation.<sup>5</sup> Hence  $p$  was taken as 61, allowable error ( $d = 10\%$ ) with confidence interval of 95% (i.e.  $Z = 1.96$ ). Using the formula for sample size estimation of  $z^2pq/d^2$

$= 4 * 61 * 39 / 6.1 * 6.1 = 255.8$  i.e. minimum 256 study subjects should be included.

Statistical Analysis: The responses were collated and analysed with the Statistical Package for Social Sciences (SPSS) 16. The association between blood donation practice and gender of respondents and category of staff was tested using Chi-square and Fisher's tests where appropriate.  $P < 0.05$  were considered statistically significant.

### **Results**

Out of 285 respondents who participated in the study, 121(42.5%) were males and 164(57.5%) females. The mean age of participants was  $31 \pm 2.1$  years and majority (84.5%) belonged to the 20-40 years age group. 71.9% of them were staff nurses. 170(63.2%) respondents had a work experience of 5 to 15 years.

The knowledge regarding blood donation among the respondents is depicted in Table 1. The basic level of knowledge among the paramedical personnel, regarding few common aspects of blood donation, was satisfactory in majority of respondents.

Table 2 shows the attitude and level of practice of the respondents. There was a positive attitude regarding blood donation among 89% of respondents. Contrary to their attitude, only 136(47.7%) had donated blood in their lifetime. The reasons for nondonation by those who have not donated include; nobody approached them for donation 67 (23.5%), unfit to donate 51 (17.9%) and fear of acquiring infection 19 (6.5%). There was a significant

association between male gender and blood donation ( $\chi^2 = 52.67, p < 0.0001$ ). However their years of experience did not show any significant association.

**Table 1: Knowledge regarding blood donation among respondents.**

	<b>Knowledge about blood donation</b>	<b>n(%)</b>
1.	<b>Do you know the common blood groups?</b>	
a.	Yes	276(96.8)
b.	No	9(3.2)
2.	<b>Do you know your blood group?</b>	
a.	Yes	285(100)
b.	No	0(0)
3.	<b>Can a person be infected by receiving blood transfusion?</b>	
a.	Yes (correct)	201(70.5)
b.	No (incorrect)	82(28.8)
c.	Don't know	2(0.7)
4.	<b>How often can an individual donate?</b>	
a.	3 monthly	153(53.7)
b.	6 monthly	56(19.6)
c.	Annually	40(14)
d.	Don't know	36(12.6)
5.	<b>Which screening tests are done before a blood donation?</b>	
a.	HIV	278(97.5)
b.	Hepatitis B & C	275(96.5)
c.	Syphilis	85(29.8)
d.	Don't know	7(2.5)
6.	<b>What is the lower age limit of Blood donation (BD)?</b>	
a.	18 years (correct response )	265(93)
b.	Others (incorrect response)	20(7)
7.	<b>Upper age limit</b>	
a.	60 years (correct response )	186(65.3)
b.	Others (incorrect response)	99(34.7)
8.	<b>Who cannot donate Blood?</b>	
a.	Children, elderly, diseased (Correct response)	280 (97.7)
b.	Healthy individuals(18-60 yrs) (incorrect response)	5 (2.2)
9.	<b>Can a women (18-60yrs) be allowed to donate when menstruating?</b>	
a.	Yes	45(15.8)
b.	No	199(69.8)
c.	Don't know	41(14.4)
10.	<b>Is blood donation safe :</b>	
a.	Yes	205(71.9)
b.	No	21(7.4)
c.	Don't know	45(15.8)

**Table 2: Attitude towards blood donation and the level of practice**

<b>Attitude towards Blood donation</b>		<b>n(%)</b>
<b>1. What do you think about blood donation?</b>		
a.	Good	253(88.8)
b.	Bad	0(0)
c.	Neutral	32(11.2)
<b>2. What do you think is the best source of blood donors?</b>		
a.	Voluntary donor	224(78.6)
b.	Replacement donor	16(5.6)
c.	Remunerated/paid donor	7(2.5)
d.	Self-donor	5(1.8)
e.	Don't know	33(11.6)
<b>3. Can something harmful happen to a blood donor during or after donation?</b>		
a.	Yes	167(58.6)
b.	No	70(24.6)
c.	I don't know	48(16.8)
<b>Practice of blood donation among respondents</b>		
<b>1. Have you donated before?</b>		
a.	Yes	116(40.7)
b.	No	169(59.3)
<b>2. If donated, how often do you donate?</b>		
a.	Donated only once/ rarely	95(33.3)
b.	Once a year , regularly	21(7.4)
c.	2-3 times a year , regularly	0(0)
<b>3. Reasons for not donating blood by non- donors</b>		
a.	Unfit to donate	51(17.9)
b.	No one asked for blood / approached for blood donation	67(23.5)
c.	Fear of needle prick	10(3.5)
d.	Fear of acquiring infection/ adverse effects on health	19(6.7)
e.	Others	22(6.3)
<b>4. Are you willing to donate blood in future?</b>		
a.	Yes	213(74.7)
b.	No	72(25.2)

## Discussion

The present study conducted on the 285 paramedical staff of the institute showed adequate knowledge and good attitude towards blood donation; however the practice of donating blood was poor. More than 90% of staff had good knowledge regarding the blood groups and the eligibility criteria. 253 (88.8%) respondents considered blood donation as good and 205(71.9%) believed it was safe to donate blood but in practice only 116(40.7%) had ever donated blood. Although the practice of blood donation is higher compared to some previous studies there is a wide disparity in the knowledge, attitude and their practice. The number of blood donors were higher in our study probably due to frequent blood donation camps conducted in our institute.

According to study conducted by **Rao Pet al** on 132 nurses in Mangalore also showed that majority had good knowledge but only 61.36% wished to donate blood.<sup>6</sup> In the study conducted by **Mullah F et al** on healthcare support staffs of a tertiary healthcare hospital in Gujarat it was seen that there was a poor knowledge of donor eligibility among the staff, 91% of them did not consider blood donation as safe and only 39% of them have donated blood.<sup>5</sup> Despite having better attitude and perception in the present study, the number of respondents who donated are similar.

This trend was also seen in some studies conducted overseas. In the study by **Nwogoh B et al** on healthcare workers a teaching hospital in Nigeria, it was seen that 92 – 95% had good knowledge regarding most basic aspects of blood donation, 81.6% had a positive attitude but only 22.1% had donated blood at least once in their life time.<sup>7</sup>

Similarly in a cross-sectional study done on 218 health care workers in Ethiopia by **Malako D et al**, it was found that 82.6 % had good knowledge, 99.1% considered that blood donation was good and 58.7% respondents in general had a good attitude towards blood donation, however only 21.6% had practised blood donation.<sup>8</sup>

Further in the present study, those who had donated blood also had donated only once or twice in their lifetime, when some friend or relative needed replacement, and do not donate on a regular basis. This was similar to the findings of **Sreedevi D et al** study in blood banks of Kurnool and Hyderabad, where 70-80% of blood donated was for replacement by family members.<sup>9</sup> This has to be corrected in order to achieve 100% voluntary unpaid blood donation to meet the requirement for blood and blood products.

The major reason for not donating among non-donors was because no one had approached them to donate as stated by 67(23.5%). This highlights the need to sensitise the healthcare workers regarding the significance of regular voluntary blood donation. The next common reason was their ineligibility to donate (17.9%) which may be due to the high prevalence of anaemia and malnutrition in our population. Some other reasons mentioned were fear of needle prick, fear of adverse effects on health, fear of knowing their screening status or cultural and religious beliefs.<sup>231</sup> (74.7%) respondents expressed willingness to donate blood in future but only 102(35.8%) of them gave their contact number which indicates a reluctance or resistance to donate due to various reasons. Similar findings were seen in studies by **Kanani AN et al**, **Nwogoh B et al** and **Malako D et al**.<sup>7,8,10</sup>

There was a significant association seen between blood donation and gender. Males have donated more as compared to female staff ( $p < 0.0001$ ) which may be due to certain factors such as monthly menstruation, pregnancy and lactation which limit their eligibility to donate blood. Also there is more prevalence of anaemia among females, which again is an ineligibility criteria. This finding was also seen in similar studies conducted by **Solanki SL et al**, **Nwogoh B et al** and **Malako D et al**.<sup>7,8,11</sup>

Among the incentives suggested by them to increase the practise of blood donation, the most favoured was considering it for promotion/appraisal (47%) or providing extra leaves for the same (43.2%). Institute can promote regular voluntary donation by giving a day

off on the day of donation. This is already effective in certain places.<sup>5</sup>

As seen in this study, we have an advantage of having a large number of personnel in the eligible age group. This potential has to be tapped in the right direction by increasing the awareness regarding voluntary blood donation, dispelling misconceptions and motivating them for voluntary blood donation. As the paramedical personnel involved in the study have satisfactory level of knowledge, they may be able to educate the patient and their attenders regarding the same.

### Conclusion

It was observed from the present study that although there is a reasonably good level of knowledge and positive attitude among the paramedical personnel, the practice of donating blood was not as expected, especially that of regular voluntary donation. Hence it is important to conduct sensitization programs to improve practice of blood donation and various incentives as suggested by the staff themselves and several international bodies maybe considered to promote blood donation among them.

**Conflict of Interest** –None

**Source of Funding**- None

**Ethical Clearance** – Obtained from the institutional ethical committee

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