

## Assessment of Knowledge, Perception & Practice of Voluntary Blood Donation among Health Professional Students in RIMS, Imphal, Manipur

Alisha J.Syiemlieh<sup>1</sup>, Brogen Singh Akoijam<sup>2</sup>, Sathish Kumar<sup>1</sup>

PGT<sup>1</sup>, Professor<sup>2</sup> Department of Community Medicine, Regional Institute Of Medical Sciences, Imphal, Manipur, India

---

### Abstract

**Introduction:** Students of health profession, by virtue of their training in medical field are expected to be well informed about the processes of blood donation and the challenges faced in the field of blood donation. They also form a potential source of eligible regular voluntary donors and at the same time, they will play a crucial role in motivating potential donors from the general population. Hence the study was conducted to assess the knowledge, perception and practice on voluntary blood donation among students of health profession in Regional Institute of Medical Sciences Imphal, and to determine the association between practice of blood donation and selected variables of interest.

**Methods:** Data were collected using self-administered questionnaires and analysed using SPSS version 21. For descriptive statistics means, standard deviation and percentages were used. Chi-square test was employed for finding the association between the study variables and a p-value of <0.05 was taken to be statistically significant.

**Results:** Out of "454" students, only "9%" had adequate knowledge about blood donation."33%" of the respondents consider blood donation safe. Only "124(27.3%)" have donated before, out of which "83(66.93 %)" belonged to 21 to 24 years age group, "81(39.7%)" among males and "43(17.2%)" among females respondents have donated blood in the past.

**Conclusion:** Around one fourth had donated blood before and half of the students intended to become regular voluntary blood donor. Around one fourth have ever donated blood before. The study showed that majority of the students lacked information about blood donation. Thus it is very important to adopt strategies to sensitize and motivate them towards voluntary blood donation at an early stage of the medical course of study.

**Keywords:** Blood donation, Medical students, Knowledge, Attitude, Practices

---

### I. Introduction

Blood transfusion is one of the most crucial interventions in various conditions like trauma, inherited blood dyscrasias, childbirth and various other medical and surgical life saving procedures [1]. In many occasions it is the only option to save a person's life. But on the contrary, blood donation is least understood, accepted and practised only by a small portion of the population in many parts of India although there are many who are eligible for this noble act.

The need for blood donation is constantly increasing worldwide. Although over 88 million units of blood are collected the world over, it is still not sufficient for the 6,910 million world population which requires 150 million units annually. Voluntary blood donation is very high in countries like Switzerland where number of voluntary blood donors per 1,000 populations is 113 and in Japan, it is 70 but in India it is 8 for every 1,000 population [2]. An overwhelming 99 per cent of the 500,000 women who die each year during pregnancy and childbirth live in developing countries with haemorrhage which invariably requires blood transfusion, the most common cause of maternal deaths [3].

It is expected that medical students have a better knowledge about blood donation than the general population and can become a potential source of regular voluntary blood donors to meet the safe blood requirements [4,5]. They will also later become potential health educators and can play a crucial role in motivating the general population to regularly practise voluntary blood donation. Therefore, this study is conducted with an aim to assess the knowledge, perception and practice of health professional students regarding voluntary blood donation and to determine the association between practice of blood donation and selected variables of interest like age, gender and knowledge on blood donation.

### II. Materials And Methods

This cross sectional survey, targeting health professional students of Regional Institute of Medical Sciences, Imphal, Manipur, was conducted during September to October 2014. All the students of the college including first to final year MBBS, BDS students and interns were included in the study. Those students who refused to participate and those who could not be contacted even on the third visit were excluded from the study.

The data were collected using a pre-tested self-administered questionnaire on the same day of distribution after obtaining informed verbal consent. The questionnaire consisted of 4 parts- first part focused on socio-demographic factors, second part on knowledge, third part and fourth part were on perception and practice of voluntary blood donation, respectively.

Respondent's level of knowledge on voluntary blood donation was assessed using a set of 20 questions. The scores ranged from 0-40 with higher score indicating higher knowledge. Those respondents whose score were equal or more than 50% of the total score (i.e  $\geq 20$ ) were considered to have adequate knowledge.

After checking for completeness and consistency the data were analysed using SPSS version 21. Descriptive statistics like mean and percentages were utilised. Chi-square test was used and p-value of  $<0.05$  was taken as significant.

This study was approved by the Institutional Ethics Committee, RIMS, Imphal before data collection. Verbal informed consent was taken and all the participants were assured that the information provided will be kept confidential and each respondent was assigned a code number.

### III. Results

There were "605" students enrolled in MBBS, BDS and internship during the study period. Out of these "454" completed the questionnaire. "349" were MBBS students, "65" were interns and "50" were BDS students. Response rate was "75%". Mean age was "21.61  $\pm$  2.22" years. "61.1%" were in the "21-25" year age group and females constituted "55%". (Table 1)

**Table 1.** Socio-demographic characteristics of the study participants. (n=454)

CHARACTERISTICS	N (%)
<b>Education stream</b>	
UG MBBS	339(74.66)
UG BDS	50(11.01)
Intern	65(14.3)
<b>Age(years)</b>	
<21	159(35.2)
21-25	277(61.1)
>25	18(3.7)
<b>Gender</b>	
Male	204(45)
Female	250(55)
<b>Religion</b>	
Hindu	182(40.2)
Christian	213(46.9)
Muslim	22(4.8)
Others	37(8.1)

"9%" had adequate knowledge about Voluntary blood donation. 74.2% knew that the correct volume of blood in each unit of blood. "76.7%" correctly answered the minimum weight for eligibility for donating blood. "50%" knew that the age range for donating blood is 18-65 yr. "63%" knew that the voluntary non-remunerated blood donor is the preferred blood donor.(Table 2)

**Table 2.** Knowledge of respondents regarding blood transfusion. (n=454)

QUESTION	RESPONSE	N(%)
Knowledge Score	Adequate	41(9)
	Inadequate	413(91)
Amount of blood contained in one unit of blood for donation	500ml	33(7.3)
	350ml	337(74.2)
	100ml	29(6.4)
	Don't know	55(12.1)
Minimum body weight for donating blood	35Kg	9(2.0)
	45Kg	348(76.7)
	55Kg	47(10.4)
	Don't know	50(11.0)
Minimum and maximum age to donate blood	18-65yrs	227(50)
	15-45yrs	19(4.2)
	18-45yrs	173(38.1)
	15-60yrs	30(6.6)
	Don't know	5(1.1)
Preferred blood donor	Voluntary non-remunerated blood donor	286(63)
	Replacement blood donor	29(6.4)

	Professional blood donor	30(6.6)
	Autologous	39(8.6)
	No response	70(15.4)

With regard to perception about blood transfusion, “33%” considered blood donation safe. “36%” considered that lack of awareness is the reason why people are reluctant to donate blood. “51.1%” agreed that encouragement from others will motivate people to donate blood while “48.9%” felt that encounter with people in need of blood would be a good motivating factor. “34.1%” opined that doctors should donate more often than the general population. (Table 3)

**Table 3.** Perception of respondents regarding blood transfusion. (n=454)

QUESTION	RESPONSE	N(%)
Do you consider blood donation safe?	Yes	150(33)
	No	14(3)
	Don't know	290(64)
Why people are reluctant to donate blood?	Lack of awareness	163(36)
	Fear of syringe	91(20)
	Feeling of weakness after donation	118(26)
	Others	82(18)
Factors that would motivate a person to become a blood donor	Encouragement from others	232(51.1)
	Encounter with people in need of blood donation	222(48.9)
Should doctors donate more than the general population	Yes	155(34.1)
	No	150(33.1)
	Don't know	149(32.80)

With regard to practice of blood donation among the students, “27.3%” have donated before. Out of these “46.77%” have donated more than once and “14.5%” have donated more than four times. “16.9%” felt discomfort after donating blood. Reasons for not donating blood were: not getting the opportunity “25.4%”, not ready “20%”, anaemic “10%”, underweight “9.6%” and underage “5.4%”. “29.5%” have encouraged others for blood donation. “78.2%” were willing to donate blood in the near future if invited. “50.7%” were willing to become regular donors. (Table 4)

**Table 4.** Practice of respondents regarding blood transfusion. (n=454)

Question	Response	N (%)
Have you donated blood before? (n= 454)	Yes	124(27.3)
	No	330(72.7)
How many times have you donated blood before? (n=124)	Once	58(46.77)
	Twice	23(18.54)
	Thrice	25(20.16)
	More than 4 times	18(14.5)

The study shows that more males have donated blood before compared to females and the difference was found to be statistically significant. There was not much difference in the pattern of blood donation among various religious groups. More than half of the students between the age groups of 25 to 29 yr have donated blood before and is found to be higher than the other age groups (p<0.05). Blood donation is more among those who have adequate knowledge compared to those who have inadequate knowledge and this difference was not found to be statistically significant.

**Table 5.** Association of blood donation with Gender, Religion, Age and Knowledge Scores. (n=454)

CHARACTERISTICS	Have You Donated Blood Before? N=454		P Value
	Yes N(%)	No N(%)	
<b>Gender(N)</b>			0.000
Male	81(39.7)	123(60.3)	
Female	43(17.2)	207(82.8)	
<b>Religion</b>			0.197
Hindu	40(22)	142(78)	
Christian	66(31)	147(69)	
Muslim	7(31.8)	15(68)	
Others	10(27)	27(73)	

<b>Age In Years</b>			
17 to 20 Years	14(8.8)	146(91.2)	0.000
21 to 24 Years	83(33.7)	163(66.3)	
25 to 29 Years	27(56.2)	21(43.8)	
<b>Knowledge Score</b>			
Adequate Knowledge	16(39)	25(61)	0.090
Inadequate Knowledge	107(26)	306(74)	

#### IV. Discussion

Our study revealed that age and gender have an impact on the practice of blood donation among medical students. Around one tenth of the students had adequate knowledge about blood donation. 27.3 % had donated blood before, which was comparable to studies conducted by Amatya et al [6] and lesser than the study conducted by Nwabueze et al [7] and Danasekaran et al [8]. Blood donation practices were found to be significantly higher among males and were comparable to the study conducted by Danasikaran et al [8] and other authors [4, 9-11]. Most of the students were willing to donate blood (78.2%), which was higher than the findings of Manikandan et al [4,9-11] and Kowsalya V et al [13]. Lack of knowledge was the main reason for not donating blood as only “9%” had adequate knowledge. This shows that sufficient steps should be developed to involve students and to create opportunities for them to donate blood. The proportion of students having adequate knowledge was lower than the study conducted by Manikaran et al [12] and Purushottam et al [5]. Hence a periodic awareness program on blood donation in the institution is needed as an initiative to achieve a 100% Voluntary blood donation. The present study indicates that majority of the participants had never donated blood before (72.7%) which is comparable to the study conducted by Agravat et al [14] and other authors [15-17]. The eligible non-donors should be motivated and awareness about the importance and health benefits of blood donation should be stressed. Their doubts regarding voluntary blood donation should be cleared and they should be encouraged to donate blood on regular basis.

It is proven that voluntary non-remunerated blood donation is the safest and most ideal way for improving the quality of blood which is collected through the blood banking services across the country. The youth from medical colleges, who form a potential group of ready available donors, have to be encouraged to participate voluntarily in the blood donation activities. In a medical college hospital, they are very much accessible to the teaching hospitals as a part of their training program and this fact can be made use of, to include awareness sessions as a part of their regular training, right in the beginning of their course itself, so as to diffuse any doubts and misconceptions that the students may have regarding voluntary blood donation [4]. This study like many other studies [19-22] shows that there is lack of information among majority of the students and therefore it is essential to have awareness program at an early period of their studies

One of the limitations of the study was the low response rate (75%) as it was conducted during the holidays when many of the students were out of station.

#### V. Conclusion

In conclusion, the study showed that knowledge on voluntary blood donation was far from adequate among the health professional students. Nearly three fourth have never donated blood before. Therefore, there is a need to have regular awareness programme on Voluntary blood donation at an earlier stage of their curriculum. Students should take leading role in motivating others to donate blood regularly on voluntary basis and be well equipped to disseminate adequate information about the advantages of blood donation not only for the recipient but also for the donor himself. Making students aware of recent findings like the benefits of frequent and long term blood donation in lowering risk of cardiovascular events in donors can also be a motivating factor to the regular donors. Such studies are needed to be carried out at all medical institutions across the country to march towards 100% blood donation only on Voluntary basis.

#### References

- [1]. Fauzia HM, Ashfaq T, Nanji K, Anjum Q, Lohar MI. Knowledge and Attitude towards Voluntary Blood Donation among Students of a Private Medical College. *Infectious Disease Journal of Pakistan*, 20(1), 2011, 273-76.
- [2]. National Voluntary Blood Donation Day. Message of the Secretary General of the Indian Red Cross Society.2015.Available at [www.indianredcross.org/sg-messages.htm](http://www.indianredcross.org/sg-messages.htm).
- [3]. World Health Organization(WHO).Blood donation factsheet 2009.
- [4]. Ahmed Z, Zafar M, Khan AA, Anjum MU, Siddique MA. Knowledge, Attitude and Practices about Blood Donation among Undergraduate Medical students in Karachi. *J Infect Dis Ther*, 2, 2014, 134.doi:10.4172/2332-0877.1000134.
- [5]. Puroshattam A Giri,Deepak B Phalke. Knowledge and Attitude about Blood donation amongst Undergraduates students of Pravara Institute of Medical Sciences Deemed University of Central India. *Annals of Tropical Medicine and Public Health*, 5(6), 2012, 569-73.
- [6]. Amatya M, Prajapati R and Yadav R. Knowledge and Practice of Blood Donation: a comparison between medical and non-medical Nepalese students. *Nepal Med Coll J* ,14(4), 283-86.

- [7]. Nwabueze SA, Nnebue CC, Azuike EC, Ezenyeaku CA, Aniagboso CC, Ezemonye OE et al. Perception of Blood Donation among Medical and Pharmaceutical Science Students of Nnamdi Azikiwe University, Awka. *Open Journal of Preventive Medicine*, 4(1), 2014, 515-522.
- [8]. Danasikaran R, Mani G, Annadurai K. A Cross –sectional study on Awareness and Practices about Blood donation among Medical students. *International Journal of Multidisciplinary Research and Development*, 1(6), 2014, 131-34.
- [9]. Siddiqui UF, Yasmeen A, Hina N, Alam SH (2009). Who donate more Medical or Non-Medical Students. *Journal of the Dow University of Health Sciences Karachi*, 6(1), 2014, 17-21.
- [10]. Safizadeh H., Pourdamghan N, Mohamadi B. University Students Awareness and Attitude towards Blood Donation in Kerman City. *Iranian Journal of Blood Cancer*, 1(3), 2014, 107-110.
- [11]. Uma S, Arun R, Arumugam P. The Knowledge, Attitude and Practice towards Blood Donation among Voluntary Blood Donors in Chennai, India. *Journal of Clinical and Diagnostic Research*, 7(60), 2013, 1043-46.
- [12]. S. Manikandan, R. Srikumar, P. N Ruvanthika. A Study on Knowledge, Attitude and Practice on Blood Donation among Health Professional Students in Chennai, Tamil Nadu, South India. *International Journal of Scientific and Research Publications*, 3(3): 2013, 1-4
- [13]. Kowsalya V, R. Vijayakumar, R. Chidambaram, R. Srikumar, E. Brabhakar Reddy, S. Latha, I. Gayatri Fathima, C. Kishor Kumar. A study on knowledge, attitude and Practice regarding voluntary blood donation among Medical Students in Puducherry, India. *Pakistan Journal of Biological Sciences*, 16(9), 2013, 439-442.
- [14]. Agravat Amit H, Gharia Amit A, Dhruva Gauravi A and Mahesh Kakadia. Knowledge, Attitude and Practice of Voluntary Blood Donation among Medical Students of PDU Medical College Rajkot. *International Journal of Current Research*, 6(5), 2014, 6939-6841.
- [15]. Misganaw C, Tenkir M, Deresea A, Tesfaye M, Tessema T, Taye H. *International Journal of Medical and Health Sciences Research*, 1(10), 2014, 105-118.
- [16]. Salaudeen AG, Odeh E. Knowledge and behaviour towards voluntary blood donation among students of a tertiary institution in Nigeria. *Nigerian Journal of Clinical Practice*, 14(3), 2011, 303-07.
- [17]. Yerpude P, Jogdand K et al. A Cross Sectional Study on knowledge, attitude and Practice on Blood Donation among Medical Students of South India. *International Journal of Medical and Health Sciences*, 2(4), 2013, 382-85.
- [18]. Arun Pullikkottil Jose, M. M Angadi, K. A Masali, Soumya Bhat, Shashank KJ, Prashant wajanti. Knowledge Attitude and Practices on Voluntary Blood Donation Among College Students in Bijapur, Karnataka. *International Journal of Current Research and Review*, 5(12), 2013, 26-31.
- [19]. Antani D, Kumar D. A Qualitative Study of Perceptions about Voluntary Blood Donation Among the Supportive Service Employees of a Multispecialty Rural Tertiary Care Hospital. *National Journal of Community Medicine*, 3(2), 2013, 1-6.
- [20]. H. Sanayaima Devi, Laishram J, Shantibala K, Elangbam V. Knowledge, Attitude and Practice of Blood Safety and Donation. *Indian Medical Gazette* 1(1), 2012, 1-5.
- [21]. Dubey A, Sonker A, Chaurasia R, Choudhary R. Knowledge, Attitude and beliefs of people in North India regarding blood donation. *Blood Transfus*. 2012. doi:10.2450/2012.0058-12.
- [22]. Bharatwaj RS, Vijaya K, Ram PR. A descriptive Study of Knowledge, Attitude and Practice with regard to Voluntary Blood Donation among Medical Undergraduate Students in Pondicherry, India. *Journal of Clinical and Diagnostic Research*, 6(4), 2012, 602-604.