

Awareness about Blood Donation among First Year Medical and Dental Students**Ms. Radha Bhandarkar¹, Dr. Anjali Patrikar^{2*}**¹II MBBS student, NKPSIMS & RC & LMH, Nagpur, India²Department of Pathology, NKPSIMS & RC & LMH, Nagpur, India**Original Research Article*****Corresponding author***Dr. Anjali Patrikar***Article History***Received: 07.03.2018**Accepted: 16.03.2018**Published: 30.03.2018***DOI:**

10.21276/sjams.2018.6.3.52



Abstract: The need for blood donation is increasing day by day due to advances made in clinical medicine. Medical and Dental students form a large, healthy, and active population of potential blood donors; their recruitment and retention would immensely help meet the demand of safe blood. To study the awareness regarding blood donation among first year Medical and Dental students in our institution and compare the two groups. A cross-sectional study among 49 first year medical students at NKP Salve Institute of Medical Science, Nagpur and 50 first year dental students at VSPM Dental College, Nagpur was conducted using a pre-designed, pre-tested, self-administered questionnaire consisting of three levels, testing the general knowledge, pre-requisites of blood donation and details of the same. All the 99 students were aware of blood donation but only 7.07% (7 out of 99) had donated blood. Donation rate was slightly more in MBBS students (5.05%) as compared to BDS students (2.02%). The most common reason for not donating blood was that they were never approached among 44.44% students followed by 20.20% students stating that they were underweight. Despite having knowledge about blood donation, prevalence of donation was very low among both MBBS and BDS students. This issue can be tackled by creating awareness at initial stages of higher education by conducting periodic awareness programs.

Keywords: Blood donation, Awareness, Medical students, Questionnaire based study.

INTRODUCTION

The need for blood donation is increasing day by day due to advances made in the clinical medicine. Safe blood is a critical component in improving health care.

Knowledge, attitude and practice studies have been used to understand the various factors that influence blood donation which is the basis for donor mobilization and retention strategies [1]. Blood transfusions form a crucial and irreplaceable part in the medical management of many diseases [2]. It saves lives and improves health, but patients requiring transfusion do not have timely access to safe blood. WHO recommends that all activities related to blood collection, testing, processing, storage and distribution be coordinated at the national level through effective organization and integrated blood supply networks. The median blood donation rate in high-income countries is 32.1 donations per 1000 persons, 14.9 donations in upper-middle-income countries, 7.8 donations in lower-middle-income countries and 4.6 donations in low-income countries [3]. WHO is advocating a policy towards 100% voluntary non-remunerated blood donation by year 2020. [4] The statistics prepared by the Association of Voluntary Blood Donors Forum (AVBDF) on the percentage of voluntary blood donation to the total blood collection in individual states in the year 2009-2010 showed a rapid decline in the number of donors throughout India [5]. There is no

shortage of Blood Banks in the country, and a total of 2708 Blood Banks in the country [6]. Medical and Dental students form a large, healthy, and active population of potential blood donors; their recruitment and retention would immensely help meet the demand of safe blood. Every year new students are admitted in to institutions where awareness of blood donation must be spread. They can further spread awareness regarding blood donation in the society. There is not much data about the awareness of blood donation among medical students. Knowledge about awareness regarding blood donation among medical students would help to formulate strategy to improve awareness about blood donation and increase the pool of voluntary blood donors. In a study in Nepal Medical College, Kathmandu, it was found that more medical students donated blood frequently, and were more knowledgeable in all aspects of blood and blood donation related knowledge than non-medicos [7]. Therefore, the present study was aimed to study the knowledge, attitude and awareness about blood donation among medical and dental students in NKP Salve Institute of Medical Sciences, Nagpur.

MATERIALS AND METHODS

After obtaining approval from Institutional Ethics Committee, a cross-sectional study among 49 first year medical students at NKP Salve Institute of Medical Science and Research Centre, Nagpur and 50 first year dental students at VSPM Dental College, Nagpur. A pre-designed, pre-tested, self-administered questionnaire, consisting of three levels was devised to collect data. Questionnaire consists of knowledge based questions. Knowledge on blood donation was assessed through 18 questions. Each correct answer was given one score, and the range of the score varied between 0 (with no correct answer) to 18 (for all correct answers). Based on total score, awareness level on blood donation was categorized into poor (≤ 9 points), average (9-15 points), and good (≥ 15 points). The questions were placed on three levels, Level 1 consisting of general knowledge about blood donation, Level 2 comprising of questions related to pre-requisites of blood donation and Level 3 having questions related to diseases transmitted, limitations of diabetics and patients of hypertension and other details. The participation in study was done on voluntary basis. All participants were given a briefing about objective of the study and maintenance of confidentiality in collection of personal data. Data was

entered in MS Excel and analysed. At the end of the study period all the participants were given a sheet of correct answers for the questions asked, to improve their awareness.

RESULTS

A total of 99 out of 100 students responded voluntarily in this study, out of which 59.5% (59 out of 99) were females and 40.4% (40 out of 99) were males. The age range of the participants was between 17 to 20 years, average age being 18.56 years. The overall result of the students was found to be 51.83%. The rate of donation was found to be 7.07% (7 out of 99) with the most common reason (47.82%, 44 out of 92) for non-donation to be that the students were never approached for donation followed by being underweight 21.7% (20 out of 92). 90.9% students were aware of the correct age for starting blood donation.

The following are the observations made in each level of the questionnaire.

Level 1 consists of general knowledge regarding blood donation.

Table-1: General knowledge about Blood Donation

Questions	No. of correct responses (%)	No. of correct responses (%)
LEVEL 1	MBBS	BDS
Who is a universal donor?	100	100
Who is a universal recipient?	97.9	98
Blood from the donor is collected from?	55	52
Is the donor paid for donation?	97.9	80
Is the donor benefitted from donation?	51	60
Is consent of donor required before collection of blood?	85.7	84
World Blood Donor's day falls on?	34.6	40
AVERAGE	74.58	73.42

Table 1 show that general information regarding blood donation was good among both MBBS and BDS students with average result being 74.58% in

MBBS and 73.42% in BDS students. More than 50% correct responses were recorded by 96.96% students.

Table-2: Pre-requisites of blood donation

Questions	No. of correct responses (%)	No. of correct responses (%)
LEVEL 2	MBBS	BDS
At what age can one start blood donation?	89.7	92
What is the age limit for blood donation?	30.6	4
How much minimum haemoglobin level is required for blood donation?	48.9	40
How frequently can you donate blood?	8.1	8
How much blood can be donated at one time?	44.8	30
AVERAGE	44.42	34.8

Table 2 shows that knowledge about pre-requisites of blood donation was less than 50% score in both MBBS and BDS students with 44.42% in MBBS

and 30% in BDS students. Only 16.1% students scored more than 50% marks. Level 3 tests knowledge about details of blood donation.

Table-3: Details about Blood Donation

Questions	No. of correct responses (%)	No. of correct responses (%)
LEVEL 3	MBBS	BDS
Which diseases can be transmitted by blood transfusion?	6.1	18
Can diabetics and patients of hypertension donate blood?	69.3	86
How many days after tattooing can a person donate blood?	18.3	36
How many patients can benefit from a single unit of blood donation?	46.9	32
How long can blood be stored after it is donated?	36.7	32
Which anticoagulants are used in blood banks?	53	62
AVERAGE	38.38	44.33

Table 3 shows the responses of level 3, the average result of which was 38.38% in MBBS and 44.33% in BDS students. More than 50% correct responses were recorded by just 23.23% students. This shows that more students have knowledge about diseases transmitted, limitations of diabetics and patients of hypertension than pre-requisites of blood donation.

DISCUSSION

The present study assessed the knowledge, attitudes and practice regarding blood donations and transfusion services among the health care professional medical students in Nagpur, Maharashtra, India. The main purpose of this study was to assess awareness levels of students and identify strategies that can be implemented to achieve the status of 100% voluntary blood donation among MBBS and BDS students. The knowledge was measured using the following questions. The general requirements to become an eligible donor, how many times in a year a healthy male and female can donate blood, volume of donated blood, number of days donated blood can be stored; components of donated blood; the maximum number of lives saved from the donated blood, etc. The overall result was found to be 51.83% which was greater than 37.3%, the result of a study conducted in Gujrat, India by Desai *et al.* [8].

92.9% students had never donated blood before which was found similar to the data found, 89.25% in a study conducted in Chennai, India by Manikandan *et al.* [9]. The most common reason (47.82%, 44 out of 92) for non-donation to be that the students were never approached for donation followed by being underweight 21.7% (20 out of 92). The results of Level 1 (general information about blood donation) were found to be excellent with 96.9% (96 out of 99) students having more than 50% correct responses.

The questions included in Level 1 were regarding knowledge about universal donors, universal recipients, whether the donor is paid for donation, collection of blood is done from artery or vein, consent of donor before donation and occurrence of World

Blood Donor's day. Similar studies conducted by Singh, Parveen *et al* and by Sarma, Roy *et al* [4, 10] showed that 77.25% and 91% students respectively were aware about the requirement of consent of donor, as compared to 84.8% found in this study. Occurrence of World Blood donor's day was responded correctly by 37.3% students as compared to 57% students responding correctly in a study conducted by Sarma, Roy *et al.* [10]. 55.5% students agreed to the fact that regular blood donation has medical benefits, similar to the observations noted by Kumari, Raina *et al.* [11].

Level 2 of the questionnaire had questions related to pre-requisites of blood donation, including questions like minimum age requirement for donation, age limit, minimum haemoglobin levels required, frequency of donation of blood, quantity of blood that can be donated at a time, etc. The overall result of Level 2 was 16.1% students having more than 50% correct responses. In a study conducted by Kumari *et al* [11], 43.10% students were aware of the amount of blood taken by the donor in each donation, similar to the 37.3% found in this study. However, only 8% answered frequency of donation correctly.

Level 3 questions tested the detailed information regarding blood donation like limitations of diabetics and patients of hypertension, diseases transmitted by blood transfusion, no of patients benefitted from a single unit of donated blood, etc. The overall result of Level 3 was 23.23% students having more than 50% correct responses. A study conducted by Nadeem *et al* [12] showed that 64% population was aware of the number of people benefiting from a single unit of blood, as compared to 39.3% found in this study.

However, only 12.12% population was able to answer the diseases transmitted by blood transfusion correctly, as compared to 35.2% observed by Giri *et al.* [13].

CONCLUSION

Significant differences exist in the knowledge and practice of blood donation among students which needs to be addressed by creating awareness [14].

Especially- at the initial stage of higher education by conducting periodic awareness programs. Basic knowledge about universal donors, universal recipients and minimum age required for blood donation was known to the students but specific areas of knowledge like diseases transmitted by blood donation, the permissible frequency of blood donation should be highlighted in awareness programs. In order to improve the knowledge and awareness, education regarding blood donation should be incorporated in the initial stage of medical education and periodic awareness programs should be there for recruitment and retention of donors. Benefits of blood donation should be highlighted during regular visits to blood banks and blood donation camps. Incentives as a part of motivation can be given to donors at student level.

ACKNOWLEDGEMENT

We are grateful to the participants of the present study, without their cooperation this study could not have been carried out.

REFERENCES

1. Kowsalya V, Vijayakumar R, Chidambaram R, Srikumar R, Reddy EP, Latha S, Fathima IG, Kumar CK. A study on knowledge, attitude and practice regarding voluntary blood donation among medical students in Puducherry, India. *Pakistan journal of biological sciences: PJBS*. 2013 May;16(9):439-42.
2. Patel N, Makadia K, Kedia G. Knowledge, attitude and practice of voluntary blood donation among undergraduate MBBS students of BJ Medical College, Ahmedabad. *Int J Apld Res*. 2015;1:23-25.
3. Singh P, Gupta R, Shora T, Langer B, Kumari R, Gupta R. Gender based knowledge, attitude and practice study about blood donation among medical students in a sub-Himalayan state. *International Journal of Research in Medical Sciences*. 2017;5(5):1882.
4. Blood safety and availability [Internet]. World Health Organization. [cited 6 March 2018]. Available from: <http://www.bing.com/cr?IG=C351A374464D4BE3838269978B83B304&CID=301D1AEC48E163D91E711146494E6261&rd=1&h=nxS1XZhG3LAQ0pWRgg6DRW7wDY7dTBufhwNACehAM0Q&v=1&r=http%3a%2f%2fwww.who.int%2fmediacentre%2ffactsheets%2ffs279%2fen%2f&p=DevEx,5072.1>
5. World Blood Donor Day: 97% blood donations in Maharashtra are voluntary | Latest News & Updates at Daily News & Analysis [Internet]. dna. 2018 [cited 6 March 2018]. Available from: <http://www.dnaindia.com/health/report-world-blood-donor-day-97-blood-donations-in-maharashtra-are-voluntary-2223391>
6. Print release by Press Information Bureau, Govt. of India, Ministry of Health and Family welfare [Internet]. Pib.nic.in. 2018 [cited 6 March 2018]. Available from: <http://pib.nic.in/newsite/PrintRelease.aspx?relid=136877>
7. Mamatya A, Prajapati R, Yadav R. Knowledge and practice of blood donation: a comparison between medical and non-medical Nepalese students. *Nepal Med Coll J*. 2012;14(4):283-6.
8. Desai K, Satapara V. A study on knowledge, attitude, and practice on blood donation among health professional students in Anand: Gujarat. *Journal of Applied Hematology*. 2014;5(2):51.
9. Manikandan S, Srikumar R, Ruvanthika P. 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*. 2013;3:2250-3153.
10. Sarma S, Roy L. *Sch J App Med Sci*. 2016;4(3(E)):994-996.
11. Kumari S, Raina T. Knowledge, attitude and practices (KAP) regarding voluntary non-remunerated blood donation (VNRBD) among the students of colleges of Jammu, India. *International Journal of Community Medicine and Public Health*. 2015;2(1):45.
12. Aslami AN, Jobby A, Simon S, Nazarudeen N, Raj P, Ramees M, Harigopal N, Nishani N. Assessment of Knowledge, Attitude and Practice (KAP) of blood donation among MBBS students of a Medical College in Kollam, Kerala. *J Evol Den Sci*. 2015 Apr 30;4(35):6086-95.
13. Giri P, Phalke D. Knowledge and Attitude about Blood Donation Amongst Undergraduate Students of Pravara Institute of Medical Sciences Deemed University of Central India. *Annals of Tropical Medicine and Public Health*. 2012;5(6):569.
14. Singh S, Chandrappa M, Venkatesha M, S A. Blood donation awareness and beliefs among medical and nursing students. *International Journal of Medical Science and Public Health*. 2015;4(10):1338.