

A study to assess the knowledge, attitude, and practices about voluntary blood donation amongst the undergraduate medical students in Solan, North India

Sushant Kumar Meinia¹, Yogesh Kumar¹, Aashna Meinia², Gagan Singh³, Neeti Dutt⁴

¹Department of Transfusion Medicine, M.M. Medical College and Hospital, Solan, Himachal Pradesh, India.

²Department of Dentistry, M.M. Medical College and Hospital, Solan, Himachal Pradesh, India.

³Department of Obstetrics and Gynaecology, M.M. Medical College and Hospital, Solan, Himachal Pradesh, India.

⁴Department of Transfusion Medicine, Government Medical College, Jammu, Jammu & Kashmir, India.

Correspondence to: Sushant Kumar Meinia, E-mail: sushant1717@gmail.com

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Abstract

Background: Voluntary blood donation is considered as backbone of blood safety and safe transfusion practices. There is a serious need to improve the recruitment and retention of voluntary donor population to ensure a sustainable safe blood transfusion practice.

Objectives: The objective of our study is to perceive various factors like knowledge, aptitude, and practices about voluntary blood donation among undergraduate medical students so that their doubts and misconceptions regarding blood donation can be removed and they can be inspired to become regular non-remunerated blood donors.

Material and Methods: This study has been carried out among second professional medical students in M.M. Medical College and Hospital, Solan, Himachal Pradesh, North India. Pre-designed and pre-arranged questionnaires were used to evaluate the knowledge, attitude, and practices regarding blood donation among 150 medical students.

Results: Most of the students 123 (82%) were aware about the suitable age group for blood donation and 114 (76%) stated that the minimum gap between donations should be 3 months. Voluntary donors were considered as the inimitable source of blood by 124 (82.67%). There were 85 respondents who had never donated blood and the chief reasons for not donating blood were fear of needle or sight of blood, perception that blood donation can leads to anemia, objection from family members, and never has been asked to donate blood. In total, 65 (43.4%) respondents had donated blood in the past and out of this, 44 (67.69%) respondent donates one time in a year, and 21 (32.31%) donates more than one time in a year. Out of 65 respondents who have previously donated blood, 25 (38.46%) had donated voluntarily whereas 40 (61.54%) had donated on replacement basis.

Conclusion: Awareness sessions on voluntary blood donation should be held regularly to create positive attitude, and to remove misconceptions among the college students about voluntary blood donation.

KEY WORDS: Attitude, knowledge, practices, replacement, students, voluntary

Introduction

Blood transfusion help in improving health and saving life of a patient, but many patients requiring transfusion do not have timely access to safe blood. Voluntary blood donation

is considered as backbone of blood safety and safe transfusion practices. There is a serious need to improve the recruitment and retention of voluntary donor population to ensure a sustainable and safe blood transfusion practice. There are three main types of blood donors: voluntary non-remunerated; family or replacement; and remunerated or paid. The supply of safe blood can only be guaranteed with the help of regular, voluntary, non-remunerated blood donors.^[1] It has been found that the voluntary non-remunerated blood donation is the safest form of blood donations.^[2] These type of donors are considered as safest because it has been seen that the prevalence of transfusion transmitted infections is lowest among these donors and sero-positivity of transfusion transmitted diseases is greater in replacement blood donors than

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voluntary donors.^[3,4] There are also some medical benefits of blood donation like the incidence of acute myocardial infarction is lesser in regular voluntary donors.^[5] Voluntary blood donation also increases the insulin sensitivity and thus helps in maintaining the equilibrium of glucose in the body.^[6] It has been found that recruitment of safe donors, mainly in developing countries, is more challenging task.^[7] Blood donation is motivated by the various factors like altruism, social pressure, and behavior and replacement needs.^[7,8] There should be greater consciousness and increased level of positive attitude about voluntary blood donation. Moreover, these donors can self-exclude themselves in situations when they are not fit to donate blood as being a regular donor they are quite aware about donor deferral conditions. According to World Health Organization (WHO), young people should be the special target group because they form a great part of the population and are generally full of zeal and enthusiasm. Even when they are too young to donate, they can be educated to become voluntary donors when they reach the legal accepted age group.^[9] The objective of our study is to perceive various factors like knowledge, attitude, and practices about voluntary blood donation among undergraduate medical students so that their doubts and misconceptions regarding blood donation can be removed and they can be inspired to become regular non-remunerated blood donors.

Material and Methods

This study has been carried out among second professional medical students in M.M. Medical College and Hospital, Solan, Himachal Pradesh, North India. Pre-designed and pre-arranged questionnaires were used to evaluate the knowledge, attitude and practices regarding blood donation among 150 medical students.

Results

Demographic Parameters

A total of 150 students responded to the questionnaire. All the respondents were qualified for blood donation as they were in the acceptable age group. The participants did not have a complete knowledge regarding the various aspects of voluntary blood donation. None of the participant was able to respond to the knowledge part of the questionnaire with 100% accuracy.

Knowledge regarding Blood Donation

A total of 146 (97.3%) respondents knew their own blood groups. Most of the respondents 147 (98%) were aware of who should and who should not donate blood. Most of the respondents 123 (82%) knew the suitable age group for blood donation. Majority of respondents have a good knowledge about various parameters like suitable blood pressure

138 (92%), suitable temperature 128 (85.3%), and suitable pulse rate 126 (84%) for blood donation. Most respondents 144 (96%) knew about the risk of transmission of infection by transfusion. In total, 114 (76%) stated that the minimum gap between consecutive donations should be 3 months. Majority of respondents 125 (83.3%) knew the correct volume of blood collected in the blood donation process and 106 (70.6%) knew about normal duration of donation process. Approximately half of the respondents (51.3%) knew about the minimum weight for donating blood and 104 (69.33%) respondents had knowledge about minimum hemoglobin levels required for blood donation. Majority of respondents 136 (90.6%) knew that the informed consent in the form of donor signature/thumb impression is essential before donation of blood. Feedback of the study subjects to the questions examining their knowledge regarding blood donation are summarized in Table 1.

Attitude towards Blood Donation

In our study, 142 (94.6%) respondents felt that donating blood is a good practice. Voluntary blood donation was confirmed as the best source of blood by 124 (82.67%) respondents. There were 85 respondents who had not donated blood even once and the foremost reasons for not donating blood were fear of needle or visibility of blood (29.41%), perception that blood donation can lead to anemia (18.82%), objection from family members (16.47%), and never has been asked to donate blood (14.11%). The questions analyzing their attitude about blood donation is summarized in Table 2.

Practice of Blood Donation

In our study, 65 (43.3%) respondents had donated blood in the past and out of this 44 (67.69%) respondent donates one time in a year and 21 (32.31%) donates more than one time in a year. Out of 65 respondents who have previously donated blood, 25 (38.46%) respondents had donated voluntarily whereas 40 (61.54%) had donated on replacement basis. Briefly, 111 (74%) wanted to become regular voluntary blood donors. In total, 21 (14%) respondents had been previously deferred for blood donation. Only seven (10.77%) respondents who had donated blood experienced some kind of problem during blood donation process. The practice of the study subjects is shown in Table 3.

Discussion

Safe and healthy donor selection is the first step towards safe transfusion services. There has been over dependence on family and directed donors to accommodate the increased necessity of blood and blood products which poses serious threat to potential recipient. There is no evidence that directed donors are safer to use than are volunteer community donors. Rather, directed donors may feel overly pressured to donate blood, and this may compromise the donor's occult illness history and hence to the safety of blood.^[10,11] The blood from

Table 1: Knowledge of study subjects regarding blood donation (*n* = 150)

Knowledge of study subjects regarding blood donation	Correct response, <i>n</i> (%)
Who should donate blood?	147 (98%)
Suitable age for blood donation	123 (82%)
Minimum interval of blood donation	114 (76%)
At most, how many times blood can be donated in a year	108 (72%)
Is paid blood donation banned in India	114 (76%)
Minimum hemoglobin for blood donation	104 (69.3%)
Minimum weight for blood donation	77 (51.3%)
Suitable blood pressure for blood donation	138 (92%)
Suitable temperature for blood donation	128 (85.3%)
Suitable pulse rate for blood donation	126 (84%)
What volume of blood can be collected during each donation?	125 (83.3%)
What is the normal duration of a donation process?	106 (70.6%)
Is donor signature/thumb impression necessary for donation?	136 (90.6%)
Do you know your blood group?	146 (97.3%)
Number of patients that can be benefited from one unit of blood	103 (68.6%)
Whether a patient can acquire infection after receiving blood transfusion?	144 (96%)
What diseases are transmissible by blood transfusion?	133 (88.6%)
Number of days donated whole blood & PRBC are stored at refrigerated temperature	87 (58%)
Does regular blood donation have medical benefits	119 (79.33%)

Table 2: Attitude about blood donation in the students under study

Attitude-based questions	Response (%)
<i>What do you think about blood donation?</i>	
Good	142 (94.6)
Bad	2 (1.3)
Neutral	6 (4)
<i>What do you think is the best source of donor blood?</i>	
Voluntary donors	124 (82.67)
Replacement donors	19 (12.67)
Paid/professional donors	2 (1.33)
Don't know	5 (3.33)
<i>Reason for not donating blood (n = 85)</i>	
Fear of needle or fear of sight of blood	25 (29.41)
Blood donation can leads to weight gain/weight loss	10 (11.76)
Blood donation can leads to anemia	16 (18.82)
Blood donation can leads to reduce immunity	8 (9.41)
No one has ever asked to donate blood	12 (14.11)
Objection from family members	14 (16.47)

voluntary non-remunerated donors has been considered as the safest form of blood. Hence, the World Health Organization (WHO) has adopted a policy at attainment of 100% voluntary non-remunerated blood donation by the year 2020.^[12] All countries in South East Asian Region are trying to eliminate culture of replacement donation and moving towards cent percent voluntary blood donation.^[13] Thus, there is need to

improve the procurement of more and more voluntary donors to ensure a reasonably safe blood transfusion practice.

In the present study, it was observed that 82% of respondents knew about the suitable age group of blood donation (18–65 years). Similar findings were observed in the study which was done by Aslami *et al*.^[14] (85%), Uma *et al*.^[15] (79.4%), and Chopra *et al*.^[16] (90%). In our study, 76% subjects had the correct knowledge regarding minimum interval of blood donation which was somewhat similar with the study of Agravat Amit *et al*.^[17] (80%). In a similar study, Chopra *et al*.^[16] and Aslami *et al*.^[14] found that their subjects who had correct knowledge about minimum interval of blood donation was 48.9% and 45%, respectively. In the present study, it was found that 68.6% of the students were aware about number of patients that can be benefited from one unit of whole blood. This was found similar to the studies done by Devi *et al*.^[18] (63.9%) and Aslami *et al*.^[14] (64%). Manikandan *et al*.^[19] found in his study that only 22% of respondents were aware about the number of patients that can be benefited from one unit of blood.

The attitude of the respondents in the present study was positive towards blood donation. In the present study, it was found that 142 respondents (94.6%) had positive attitude towards blood donation which was almost similar with the studies of Agravat Amit *et al*.^[17] (96.6%) and Nwogoh *et al*.^[20] (89.3%). Voluntary blood donation was confirmed as the best source of blood by 124 (82.67%) respondents which is similar to the studies of Nwogoh *et al*.^[20] (80.7%), Agravat Amit *et al*.^[17] (80%) and Aslami *et al*.^[14] (70%).^[14] In our study, the foremost reasons for not donating blood were fear of needle or visibility of blood, blood donation can lead to anemia, objection from

Table 3: Practices of study subjects regarding blood donation

Practices of study subjects on blood donation	Response	Number	%
Have you donated blood earlier?	Yes	65	43.3
	No	85	56.7
How often do you donate blood?	One time in a year	44	67.69
	>1 time in a year	21	32.31
Reason for Blood donation	Voluntary	25	38.46
	Replacement	40	61.54
Do you want to be a regular voluntary donor?	Yes	111	74
	No	39	26
Have you been previously deferred for blood donation?	Yes	21	14
	No	129	86
Did you face any problem after blood donation?	Yes	7	10.77
	No	58	89.23

family members, never has been requested to donate blood. The most common among them were fear of needle or visibility of blood and the perception that blood donation can make them anemic. The non-donors with positive attitude and belief should be inspired and proper motivation lectures should be delivered about voluntary blood donation. Moreover, opportunities should be provided to them to donate blood, whereas non-donors with the negative attitude should be educated about significance and health advantages of regular blood donation. Their misconception and apprehension about blood donation should be cleared and they should be inspired to become regular donors.

In our study, we found that there were 65 (43.4%) students who had previously donated blood which is quite higher than similar kind of studies done by Agravat Amit *et al*^[14] (24%), Chopra *et al*^[16] (23%), Nwogoh *et al*^[17] (22%), Jose *et al*^[18] (18%), Devi *et al*^[20] (14%), and Aslami *et al*^[21] (10%). Among blood donors, 67.69% had donated blood only once. This finding is similar to the Aslami *et al*^[14] who observed that 71% of respondents had donated blood one time. It was found that the replacement blood donation (61.54%) was the main type of donation among the blood donors. This finding coincides with study of Chopra *et al*^[16] who observed 65.6% of replacement blood donors. It was also observed that 38.46% respondents who had donated blood previously were voluntary donors. This was comparable with the study carried out by Aslami *et al*^[14] who observed 28.6% of voluntary donors. Few donors (10.77%) who had donated blood previously expressed a little discomfort after blood donation which was much alike with the study which was done by Manikandan *et al*^[19] who observed that 11.63% donors faced discomfort after blood donation. In the present study, it was found that 76.6% of all the respondents consented to donate blood in the future. This was found consistent with the similar studies performed by Chopra *et al*^[16] and Aslami *et al*^[14] who concluded that 75.54% and 89.3% students were desirous to donate blood in future, respectively.

Thus analyzing all the observation from the study it seems that general awareness about knowledge regarding blood

donation is high among medical students. There is still a great scope for the improvement in the attitude and practices so that they can become regular blood donor and thus to accomplish the goal of WHO to make cent percent voluntary blood donation. Moreover, the medical students can become potential voluntary blood donors and can be source of safe blood especially in the crisis time as they are readily available near the hospital premises. In addition, they can be a source of guidance to their friends and general public and can motivate them about advantages of voluntary blood donation. Regular participation of students and interactive awareness sessions on voluntary blood donation should be held regularly to create positive attitude, and to remove misconceptions amongst the college students about voluntary blood donation so that they can be inspired to become regular non-remunerated blood donors.

Conclusion

Awareness sessions on voluntary blood donation should be held regularly to create positive attitude, and to remove misconceptions amongst the college students about voluntary blood donation.

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