The Research of Medical Science Review
ISSN: 3007-1208 & 3007-1216 Volume 3, Issue 8, 2025

KNOWLEDGE, ATTITUDE, AND PRACTICE REGARDING BLOOD DONATIONS AMONG PRE-CLINICAL AND CLINICAL UNDERGRADUATE MEDICAL STUDENTS

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DOI: https://doi.org/10.5281/zenodo.16741845

Keywords
blood donation, medical students, knowledge, attitude, practice

Article History
Received on 28 April 2025
Accepted on 09 July 2025
Published on 05 August 2025

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Abstract

Background: *The practice of blood donation has been changing over the past years. It can prove to be a life-saving measure, especially in emergencies. Arranging the required type and quantity of safe blood within the shortest possible time is of extreme importance. The knowledge, attitude, and practice of the medical students as future doctors can be of great value if their reservations can be identified and redressed before they embark upon related health education of common people.*

Objectives: *To assess knowledge, attitude, and practice regarding voluntary blood donations among the medical undergraduates, with their differences between pre-clinical and clinical students.*

Methodology: *Setting: Gujranwala Medical College, Gujranwala, and Shalamar Medical & Dental College, Lahore. Duration: August-December 2024. Study population: Pre-clinical and clinical undergraduate MBBS students. Design: Descriptive, cross-sectional study. Sampling technique: Convenient. Sample size: 283. Inclusion criteria: All those MBBS students who voluntarily agreed to participate in the study after giving their online informed consent by filing the emailed consent forms. The Institutional Review Board approved this limited academic study. Data collection: Google Forms were used to collect data online. Data analysis: SPSS version 21 was used for this purpose.*

Results: *Out of the total 283 participants, 92% of participants knew their blood groups. 34.6% had never donated blood. Among those who had voluntarily donated blood, 76.5% had done so in hospitals. 56.1% had donated blood to a friend or family member. The main reasons for not having to donate blood were lack of opportunity (47%) and fear of needles (27%).*

Conclusion: *Further studies are needed regarding voluntary blood donations by the medical undergraduate students*

INTRODUCTION

Among the eight key lifesaving medical interventions, blood donation holds a prominent place. Blood, defined as a special fluid present in our bodies, plays so many important roles, the major one being

transporting oxygen, nutrients, and other substances to the cells and taking the waste metabolic products away. Hence, every year, alongside saving millions of lives, reducing mortalities and reviving morbidities, the health of several individuals is improved by this simple intervention.

In early times, the properties of blood were studied by people like ancient Egyptians, who later used it to cure many disorders. [1] Many studies have been conducted about the knowledge, attitudes, and practices of blood donations. A study about the level of knowledge and associated factors related to attitude and practice of blood among the health sciences students at Addis Ababa University, Ethiopia, showed that a good prevalence of knowledge was found in 83.7% of the participants. It also showed that 32% of the respondents had an unfavorable personal attitude towards it, and only 23.4% had ever donated blood. [2]

The W.H.O. has played the lead role in the movement to improve blood safety all over the world since 1975. [3] The main objective of the W.H.O. is to ensure universal access to safe, quality, and efficient blood for transfusion. [4] 'The World Blood Donor Day' is celebrated on 14 June each year; the 2020 campaign had the theme and slogan of "Safe blood saves lives" and "Give blood and make the world a healthier place" respectively. The idea is to focus on the contribution an individual giver can make in improving the health of others in the community. Blood donations are needed all over the world to ensure timely individuals and communities have access to safe, timely, and adequate quality-assured blood and blood products in both routine and emergencies. The campaign calls on more people all over the world to become lifesavers by volunteering to donate blood regularly. [3]

A sufficient blood supply is maintained if 1-3% of the population donates blood. [4] In Pakistan, more than 1.5 million pints of blood are collected each year, from which about 65% persons are replacement donors, 25% voluntary donors, and 10% professional donors. [5]

Young people are mostly medically fit, constitute a major part of our population as potential blood donors, so there is a dire need to encourage them to voluntarily donate blood. According to the W.H.O. there are only 38% of people under the age of 25 who voluntarily donate blood. [6] Nevertheless, many studies have shown that the lack of such contribution is more from medical students than the non-medical ones. [7]

The major obstacles have been the inadequate and improper information regarding needs and fears associated with the process. [8]

However, there are many students who want to donate blood on a regular basis, but they need to be encouraged by highlighting the importance of blood donation. [9]

This small study is also expected to possibly enhance the awareness needed and the self-motivation of young medical students regarding blood donations, too.

METHODOLOGY

This cross-sectional study was conducted from August to December 2024 to assess the targeted outcomes among undergraduate medical students. The study population comprised pre-clinical and clinical MBBS students from two institutions: Gujranwala Medical College, Gujranwala, and Shalamar Medical & Dental College, Lahore.

Study Design and Sampling

A convenient sampling technique was utilized to recruit participants. The sample size was 283 students, selected based on voluntary participation during the study period.

Inclusion Criteria

- MBBS students enrolled in any year of study (pre-clinical or clinical) at the selected institutions.
- Students who voluntarily agreed to participate in the study.
- Students who provided online informed consent by completing the emailed consent forms before accessing the questionnaire.

Exclusion Criteria

- Students who did not provide informed consent.
- Students who submitted incomplete responses or withdrew participation at any stage.
- Students currently on leave of absence or not actively enrolled during the study period.

Data Collection

Data was collected through a self-administered online questionnaire developed using Google Forms. The questionnaire link, along with the consent form, was distributed via official communication channels, including student email groups and institutional learning platforms. Responses were anonymized to maintain confidentiality and encourage honest

reporting.

Ethical Considerations

The study received approval from the Institutional Review Board (IRB) of the respective institutions. It was conducted as a limited academic study with no financial incentives or conflicts of interest. Participation was entirely voluntary, and students were informed of their right to withdraw at any stage without repercussions.

Data Analysis

Collected responses were initially compiled in Microsoft Excel and subsequently exported to IBM SPSS Statistics, version 22, for analysis. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were calculated where appropriate, depending on the nature of the variables.

RESULTS

The gender-wise composition of our total study population of 283 was 166 female (58.7%) and 117 male (41.3%) students, while in group-wise distribution, the study population had 116 pre-clinical (41%) and 167 (59%) clinical students. The distribution of total respondents in academic year-wise is given in Table 1.

Table 1. Academic year-wise distribution of study participants

MBBS Years	Frequency	Percent
First year	52	18.4
Second year	64	22.6
Third year	47	16.6
Fourth year	52	18.4
Final year	68	24.0
Total	**283**	**100.0**

The overall knowledge about one's exact blood group was 91.9% (n=260) among participants, comprising 105 pre-clinical (90.9%) and 155 clinical (92.8%) students. Overall, 91.5% (n=259) of students affirmed the importance of voluntary blood donations, i.e., 103 pre-clinical (88.8%) and 156 clinical (93.4%) students.

Details of the knowledge regarding universally unfit first-time blood donors without even carrying out their necessary blood screening tests are given below in Table 2.

Table 2. Adults universally rejected as first-time voluntary blood donors even without carrying out their necessary blood screening tests

Adults universally rejected as first-time voluntary blood donors without carrying out the necessary screening tests		Frequency	Percent
Preclinical Students	Addicts	84	29.7
	Hepatitis	4	1.4
	HIV	2	0.7
	STDs	3	1
	Pregnancy	1	0.35
	Smoker	5	1.76
	Migrant	18	6.36
	Total	**117**	**41.27**
	Addicts	123	43.5
	Hepatitis	2	0.70
	HIV	1	0.35

Clinical Students	STDs	3	1
	Pregnancy	0	0
	Smoker	13	4.59
	Migrant	24	8.5
	Total	**166**	**59.24**

The response for 'Addicts' as universally and medically rejected first-time blood donors, even without carrying out their screening tests, consisted of 84 (29.7%) pre-clinical and 123 (43.5%) clinical students. For 'Migrants' were considered so by 18 (6.36%) pre-clinical and 24 (8.5%) clinical students.

The overall awareness about the importance of blood donations was 91.5% (n=259) among all our study participants (n=283), but only 34.6% (n=98) had ever donated blood voluntarily, with no significant predominance of any of the two groups. Overall, 76.5% (n=75) of respondents donated blood in a hospital setting while 23.5% (n=23) donated blood in the blood camps. Blood was voluntarily donated by the concerned respondents to strangers (43.9%), family members (33.7%), and friends (22.4%).

One main reason for not voluntarily donating blood was 'lack of opportunity' as reported by 17% (n=32) pre-clinical and 30% (n=56) clinical students, and the second main reason was 'fear of needle' as reported by 13% (n=24) pre-clinical and 14% (n=27) clinical students. However, 12% (n=21) clinical students further mentioned 'weakness/anaemia as the third reason.

Maintaining an adequate and safe blood supply is an issue of concern for health planners, especially with the increase in demand. Therefore, understanding the beliefs, attitudes, and level of knowledge associated with blood safety and donation is crucial.

DISCUSSION

The blood donors are classified as voluntary donors, replacement donors, and paid donors. In developing countries, people who voluntarily donate blood do so either due to self-motivation or have the aim of helping their near and dear ones. Still, replacement and paid donors make up over 50%. [7, 10] Out of 283 participants, 91.9% knew their blood group, which was similar to the results of a study held among medical students of Nnamdi Azikiwe University, where 94.6% participants knew their blood group. [10]

Moreover, 91.5% of the participants knew the importance of blood donation in comparison to the study done in Ethiopia, where 83.7% of the participants were aware. [2] According to our research, 34.6% of the participants had donated blood voluntarily at least once in their lifetime, and this practice was higher than the studies held in Ethiopia (23.4%) [2] and Nepal (28.5 %), [7] while it was lower than that of Nigeria (59.5 %). [8]

Among those who donated blood, 76.5% of blood donations were done in hospital settings, and 56.1% were donations for friends and family members. This finding was similar to the findings observed in several different studies, in which it was seen that 63.9% of the people donated blood to friends and family, and it was also found to be the major motivational factor for blood donation. [6] Paid donors, as well as inadequate knowledge and insufficient screening for certain diseases before blood donations, increase the avoidable risk of blood-transmitted diseases.

Blood donation involves a process of giving blood to people to save lives; thus, one acts as a savior in emergencies like trauma, surgery, and blood disorders. The major reservations among those who did not donate blood were that they did not get an opportunity to do so (47%) and fear of needles (27%). This was similar to a study in which 42.6% of the doctors who had never donated blood claimed that they did not get an opportunity or weren't asked to do so. [5]

Similarly, lack of such opportunity and fear of needles were the main factors for the lack of blood donations among medical students in another study. [11] Despite a lot of efforts for the promotion of blood donations and periodic establishment of blood donation camps by different non-profit organizations, our general public is still not enthused about this noble practice. The unfounded myths, the reasons for fear, and misconceptions about this life-saving practice must be overcome. Finding ways to overcome these hurdles will help in altering the donor's behavior, and thus inspecting this behavior will assist in future programs as well. [9]

One major benefit is possibly the prevention of a life-threatening condition of excess presence of iron levels in the body. [14] Hence, the voluntary and unpaid blood

donors are to be encouraged to prevent such a condition through blood donation. [8] In a study, the blood donation rate among males was found to be 33.3% while only 18.7% women had a history of blood donation. [15] Therefore, encouraging medical students to volunteer for voluntary blood donation can create a great bulk of safe and easily approachable blood. [16]

CONCLUSION

The knowledge regarding blood groups and the importance of blood donations has been adequate among our study participants, though the actual practice of blood donations is still quite unsatisfactory. The two main reasons reported for not donating blood have been the lack of opportunity for such donation, followed by fear of needles. The functioning of students blood donation societies can provide opportunities to those who are motivated to voluntarily donate blood to all those in need. Awareness sessions for students can be arranged in medical institutions to promote the understanding and practice of voluntary blood donation.

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