

Voluntary Blood Donation - Knowledge, Attitude and Practice amongst Students of Medical Schools Located in the Caribbean

Samira AW¹, Samith Ahmed^{2,*}, Jessica Poirier³, Desmond Okeke³, Justice Chima³,
Veronica Bamisaye³, Melody Johnson³

¹Department of Microbiology, All Saints University School of Medicine, Hillsborough St, Roseau, Dominica

²Department of Pathology, All Saints University School of Medicine, Hillsborough St, Roseau, Dominica

³Medical Students, All Saints University School of Medicine, Hillsborough St, Roseau, Dominica

*Corresponding author: samith_17@yahoo.com

Abstract Background: Blood donation is one of the major concerns in the modern day society, as donated blood is lifesaving for the individuals who require it. In developing countries, the concept of voluntary blood donors is almost non-existent due to the near absence of blood donor motivation and educational programmes. The objective of this study was to determine the knowledge, attitude and practice about blood donation among medical students in two Medical schools of the Caribbean. **Methods:** A cross-sectional study was conducted in private medical colleges in Dominica and St. Vincent & the Grenadines between November to December 2017. A total of 208 medical students were interviewed with the help of structured questionnaire and data analysis was performed. **Results:** The majority of participants had appropriate knowledge regarding the various aspects of blood donation. Attitude showed that around 92% of students were positive about blood donation. Around 81% of students showed willingness to donate blood. **Conclusion:** Even with an adequate knowledge about blood donation, a majority of medical students have not donated blood before. Active awareness sessions on blood donation should be organized and opportunities for blood donation should be created for the students, to ensure good quality of blood and safe modern medical care.

Keywords: Voluntary blood donation, Caribbean medical students

Cite This Article: Samira AW, Samith Ahmed, Jessica Poirier, Desmond Okeke, Justice Chima, Veronica Bamisaye, and Melody Johnson, "Voluntary Blood Donation - Knowledge, Attitude and Practice amongst Students of Medical Schools Located in the Caribbean." *American Journal of Microbiological Research*, vol. 6, no. 2 (2018): 42-46. doi: 10.12691/ajmr-6-2-2.

1. Introduction

Blood donation is commonly practiced all over the world in order to meet the shortage for the ever-growing demands. The ABO blood group system was discovered by Karl Landsteiner in 1900. The first non-direct transfusion was performed on March 27, 1914 by the Belgian doctor Albert Hustin, though this was a diluted solution of blood. The Argentine doctor Luis Agote used a much less diluted solution in November of the same year, both used sodium citrate as an anticoagulant [1].

Donated blood can be lifesaving for individuals who have lost large volumes of blood from serious accidents, obstetric and gynecological bleedings, or surgery and stem cell transplant patients as well as for individuals who have symptomatic anemia from medical and hematologic conditions or cancers. Therefore, blood is an important concern to the society. The use of these life-saving products may be complicated by infectious and immunological diseases - some of which could be life-threatening.

The first step towards blood safety is to encourage

voluntary blood donations to ensure low-risk and regular donors, who donate blood two to three times a year and continue to donate at least once a year.

What encourages a person to donate blood for free? What are the obstacles facing a person? And how can the blood centres ask the donors to return again? Answers to these questions make it possible for blood collection agencies to determine which persons are expected to be new donors and enable making predictions of future donors. [2]

The medical students are the future forerunners of medical health care in our society. Historically, it is the leaders who decide the fate of their masses. Thus keeping this in mind, it is essential to assess the attitude, knowledge and practice of blood donation among them before they become licensed physicians.

2. Objective of the Study

To assess the knowledge, attitude and practice about blood donation among medical undergraduate students of preliminary curricular stages.

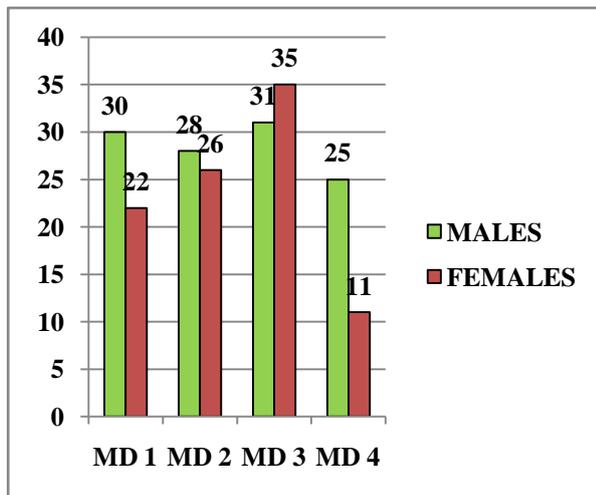
3. Materials and Methods

This was a cross-sectional study conducted in two medical schools in the Caribbean during the period of November to December 2017. Students had completed their Pre-Medical training in Canada or in the Caribbean and were currently pursuing their Basic Medical Sciences before appearing for USMLE Step 1. The sample size was 208 students studying in MD 1, MD 2, MD 3 and MD 4 who volunteered to undertake the survey. A self-created questionnaire was used for data collection. Prior ethical approval was obtained from the Institutional Research Committee. Few students were randomly chosen to distribute the questionnaire to the participants. They clarified the doubts arising while completing the questionnaire and helped to fill in the consent forms correctly. The time allotted for filling in the questionnaire was 15 minutes. Filled questionnaires were collected at the same time. The data was analyzed on SPSS 19 software.

4. Results

4.1. Demographic Parameters

A total of 208 Medical Students responded to the questionnaire. The age range of the respondents was 18-40 years (median age was 23 years). There were 114 males and 94 females. Details of their demographic parameters are represented in Graph 1.

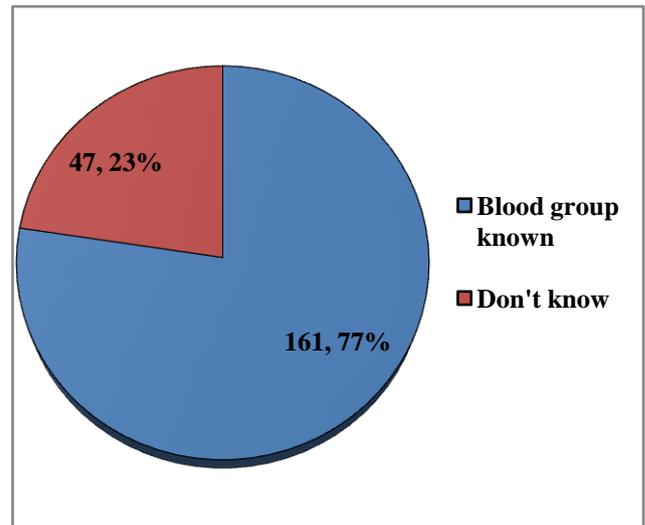


Graph 1.

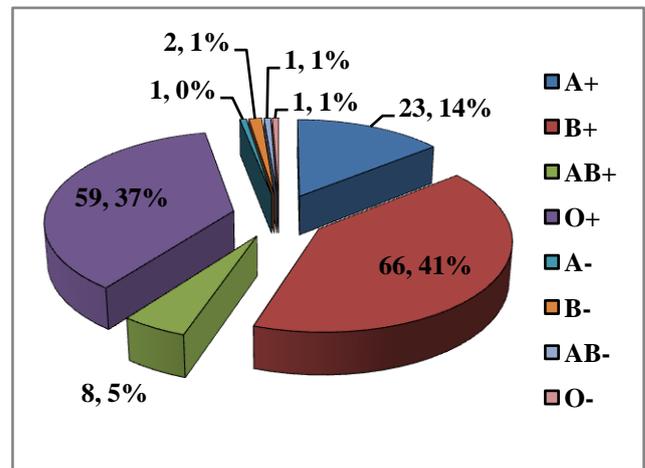
4.2. Knowledge of Blood Transfusion

A total of 188 (90.4%) respondents expressed good knowledge of the common blood group types. 161 (77.4%) students knew their own blood groups with 47(22.6%) not knowing their blood groups. The data is shown in Graph 2.

The most common blood group among the students was B+ve, 66 (41%), followed by O+ve, 59 (36.6%), A+ve, 23 (14.3%) and AB+ve, 8 (5%). The students with Rh -ve blood group were only 5 amounting to 3.1%; this is shown in Graph 3.

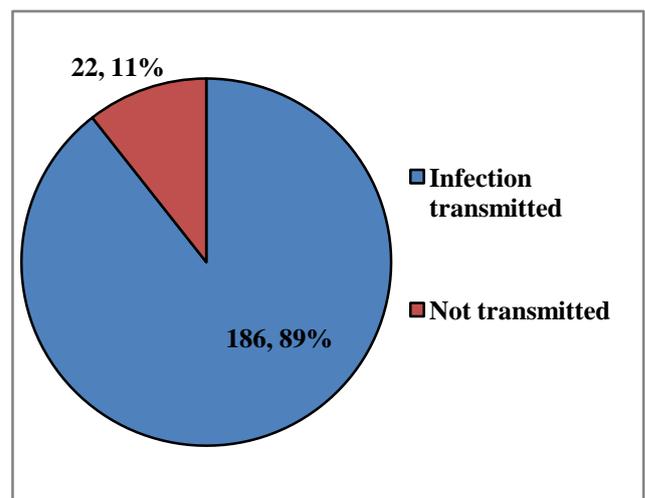


Graph 2.



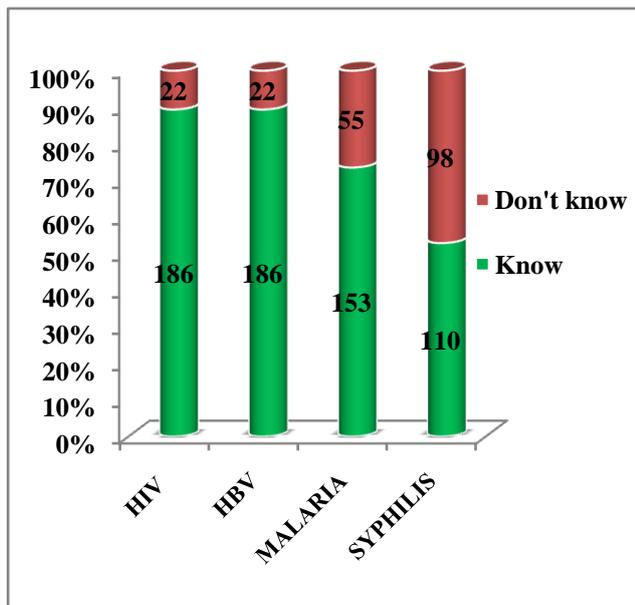
Graph 3.

Most respondents, 186 (89.4%) were aware of the risk of transmission of infection by transfusion, represented by Graph 4.



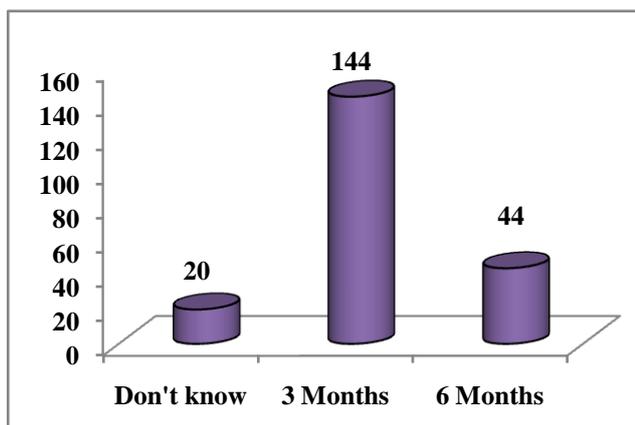
Graph 4.

The risk of transmission of HIV& HBV, Malaria and Syphilis was affirmed by 89.4% (186), 79.6% (153), 52.9% (110) students respectively as shown in Graph 5.



Graph 5.

Forty-four (21.2%) stated that the minimum interval between donations is 6 months, 144 (69.2%) said 3 months which is correct, while 20 (9.6%) said they have no knowledge of the same, as shown in Graph 6.



Graph 6.

45 (21.6%) students didn't know the minimum age i.e., 17 years for donating blood and 69 (33.2%) students didn't know the minimum weight (110 lbs) required.

The majority of the respondents had a good knowledge on who should and who should not donate blood.

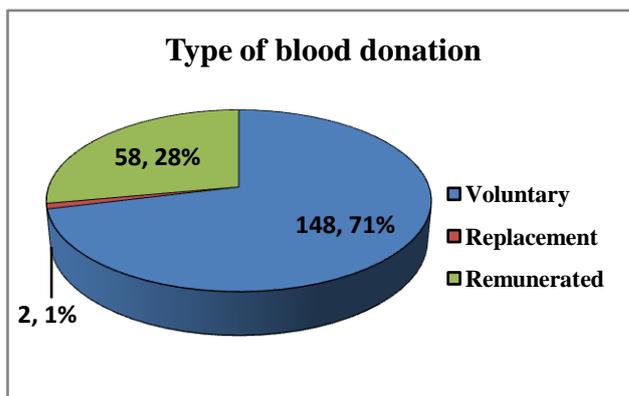
However, 33 (15.9%) of the respondents said people under influence of alcohol should donate. 28 (13.5%) said that people with fever may donate blood and 33 (15.9%) respondents said people on antibiotic therapy can donate blood. 139 (66.8%) knew the correct volume of blood collected in the process. Similarly, 141 (67.8%) knew that

the donation process lasts less than 20 minutes. Details of the respondent's knowledge of blood donation are shown in Table 1.

4.3. Attitude towards Blood Donation

A hundred and ninety three (92.8%) respondents said blood donation was good.

Voluntary donation was accepted as the best source of blood donors by 148 (71.2%), replacement donors by 2(0.9%), remunerated by 58 (27.9%) as shown in Graph 7.

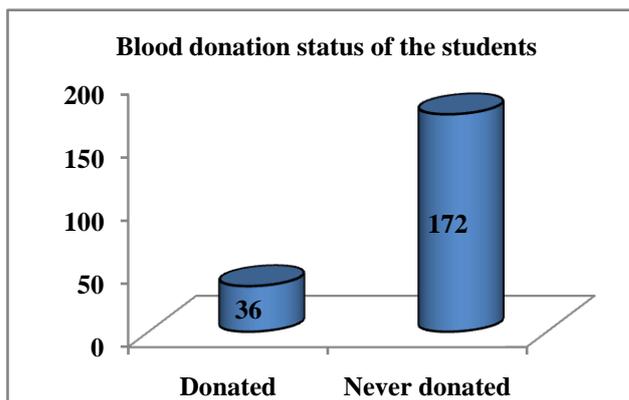


Graph 7.

45 (21.6%) of the respondents said blood donation may have adverse consequences. One hundred and forty one (67.8%) respondents felt that donated blood must be given free of cost by the blood banks to the patients in need.

4.4. Practice of Blood Donation

Thirty-six (17.3%) have donated in the past. Only 10 (4.8%) were regular donors. Of the 36, 22 (10.6%) donated to a friend or relative in need of blood, shown in Graph 8.

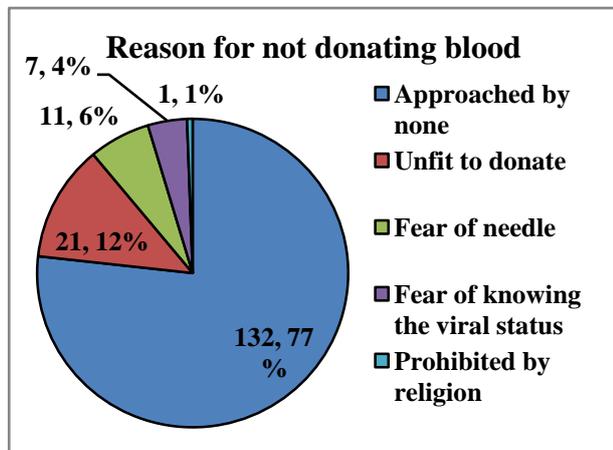


Graph 8.

Table 1. Knowledge on donor selection criteria

Sl no	Criteria	Correct response		Incorrect response		P value
		Males (114)	Females (94)	Males (114)	Females (94)	
1.	Can pregnant women donate blood?	64 (56.1%)	72 (76.6%)	50 (43.9%)	22 (23.4%)	0.002; NS
2.	Can females donate during menstruation?	70 (61.4%)	73 (77.7%)	44 (38.6%)	21 (2.3%)	0.012; NS
3.	Can a hypertensive donate?	34 (29.8%)	40 (42.6%)	80 (70.2%)	54 (57.4%)	0.056; S
4.	Can asthmatics donate?	100 (87.7%)	63 (67%)	14 (12.3%)	31 (33%)	0.0003; NS
5.	Can a person on anti-cancer treatment donate?	93 (81.6%)	80 (85.1%)	21 (18.4%)	14 (14.9%)	0.498; S
6.	Can a diabetic donate?	88 (77.2%)	75 (79.8%)	26 (22.8%)	19 (20.2%)	0.65; S
7.	Can a smoker donate?	88 (77.2%)	54 (57.4%)	26 (22.8%)	40 (42.6%)	0.005; NS

The reasons for non donation by those who have not donated include: - nobody approached them for donation – 132 (76.7%), unfit to donate - 21 (12.2%), fear of needle - 11 (6.4%), fear of knowing their viral status - 7 (4.1%) and their religion prohibits blood donation - 1 (0.6%). The results are shown in Graph 9.



Graph 9.

169 (81.2%) respondents accepted to be invited to donate blood in the future.

5. Discussion

This study was conducted in order to obtain information and inputs from Medical students of Caribbean medical colleges which will be useful in implementing relevant donor recruitment strategies because this group of individuals can contribute to health promoting activities in the society.

There are plenty of publications assessing the knowledge, attitude, and practice of voluntary blood donation; however, very few studies have been published which assess the same on medical students in the Caribbean.

This study has shown as expected that Medical students have a decent knowledge of blood groups, possible transfusion transmissible infection, and the appropriate donor population. Most of the students who were willing to donate blood, had not donated blood because of the lack of an opportunity to do so [3]. This finding has been corroborated by the findings of past studies.

This highlights a need for serious sensitization and education to everybody through the mass media so as to encourage them to approach the blood bank for a blood donation exercise. As compared to a previous study among college students, where there were a high number of respondents with a negative attitude towards blood donation [4], in our study we had a positive attitude towards blood donation. Study by Mullah et al. assessing the knowledge and perception of healthcare support staffs of a tertiary healthcare facility in Gujarat revealed a poor knowledge of donor eligibility among the staffs, 91% of them perceive blood donation as unsafe, and about 39% of them have donated blood [5]. In Saudi Arabia, 11.5% of the participants in another study believed that blood donation is harmful to the donor [6]. In our study however

21% students considered blood donation as unsafe and 17% donated blood.

A Nigerian study [7] found that 20.3% of their study population would not donate blood and, curiously enough, will not accept blood transfusion due mainly to religious beliefs, a situation reminiscent of the behavior of Jehovah's witnesses [8,9]. Thus the religious factor could have either a positive or negative motivating effect on blood donation. In our study however it was less than 1%.

Of the 36 students who donated blood, the majority 22 students (61.1%) donated to relatives or friends which can be comparable to another study done in Saudi Arabia [10]. The majority - 84.5% of the participants preferred the donors to be direct donors; either family members or friends to eliminate the risk of acquiring an infectious disease. It is surprising to find that a sizable number of participants in the current study were not well informed about some areas of blood donation and blood transfusion - in general as the minimum age and weight for blood donation.

It is a well known fact that voluntary blood donation is the most preferred and safest method for collecting blood and thereby improving the quality of blood available in the blood banks over blood taken from donors who were remunerated by cash or tokens for gifts. Young budding doctors from medical schools have a good knowledge and attitude for blood donation and can be easily encouraged to donate blood, should a need arise or by Mass blood donation drives held by the university or Public Non Government organizations. The reason is solely due to the training imparted to them right from the beginning, during their course of studies.

Major limitation we faced during the study was that the data does not represent the general population of the Caribbean countries of Dominica and St. Vincent & the Grenadines as the bulk of Students belonged to various nationalities - Nigeria, Cameroon, Canada, United States, India, Sri-Lanka, Pakistan and United Kingdom. Lastly, data on those who did not agree to participate in the study was not collected and analyzed, so it was not possible to exclude a sampling bias.

6. Conclusion

In conclusion, the information received in this study highlights the need for appropriate health promotional campaigns for blood donation so as to create more awareness and improve Knowledge and Practice of Voluntary blood donation among the medical students.

References

- [1] Gordon, Murray B. (1940). "Effect of External Temperature on Sedimentation Rate of Red Blood Corpuscles". *Journal of the American Medical Association*. 114 (16).
- [2] I. Buciuniene, L. Stonienė, A. Blazevičienė, R. Kazlauskaitė, and V. Skudiene, "Blood donors' motivation and attitude to nonremunerated blood donation in Lithuania," *BMC Public Health*, vol. 6, article 166, 2006.
- [3] Gilani I, Kayani ZA, Atique M (2007) Knowledge, attitude and practices (kap) regarding blood donation prevalent in medical and paramedical personnel. *J Coll Physicians Surg Pak* 17: 473-476.

- [4] Wiwanitkit V (2000) A study on attitude towards blood donation among people in a rural district, Thailand. *Southeast Asian J Trop Med Public Health* 31: 609- 611.
- [5] F. Mullah, D. Kumar, D. Antani, and M. Gupta, "Study of knowledge, perceptions and practices related to blood donation among the healthcare support staff of a tertiary care hospital in Gujarat, India," *The Online Journal of Health and Allied Sciences*, vol.12, 2, no. 1, 2013.
- [6] A. M. Al-Drees, "Attitude, belief and knowledge about blood donation and transfusion in Saudi population," *Pakistan Journal of Medical Sciences*, vol. 24, no. 1, pp. 74-79, 2008.
- [7] R. A. Okpara, "Attitudes of Nigerians towards blood donation and blood transfusion," *Tropical and Geographical Medicine*, vol.41, no. 1, pp. 89-93, 1989.
- [8] T. K. Rosengart, R. E. Helm, W. J. DeBois, N. Garcia, K. H. Krieger, and O. W. Isom, "Open heart operations without transfusion using a multimodality blood conservation strategy in 50 Jehovah's witness patients: implications for a "bloodless" surgical technique," *Journal of the American College of Surgeons*, vol. 184, no. 6, pp. 618-629, 1997.
- [9] M. C. Mann, J. Votto, J. Kambe, and M. J. McNamee, "Management of the severely anemic patient who refuses transfusion: lessons learned during the care of a Jehovah's Witness," *Annals of Internal Medicine*, vol. 117, no. 12, pp. 1042-1048, 1992.
- [10] A. G.M. Abdel Gader, A. M. A. Osman, F. H. Al Gahtani, M. N. Farghali, A. H. Ramadan, and A.K.M.Al-Momen, "Attitude to blood donation in Saudi Arabia," *Asian Journal of Transfusion Science*, vol. 5, no. 2, pp. 121-126, 2011.