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To Give or Not to Give: Exploring Blood Donation Barriers and Motivators Among Medical and Non-Medical Students

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ABSTRACT

This study investigates the barriers and motivators involved in blood donation among medical and non-medical students in private institutions. Analysis of data from 675 nonmedical students and 894 medical students reveals that 31.8% of medical students have donated blood, while 27.11% of non-medical students have done so. Primary motivators for non-medical students include the opportunity to save lives (17.48%) and contribute to society (6.22%), whereas medical students are primarily driven by saving lives (21.47%) and societal contribution (5.92%). Barriers such as inconvenient donation center locations (12.34% for non-medical, 10.67% for medical), eligibility uncertainties (8.91% for non-medical, 9.24% for medical), academic commitments (5.67% for nonmedical, 6.81% for medical), and psychological concerns (3.45% for non-medical, 4.12% for medical) hinder participation. The findings underscore the necessity for targeted awareness and educational programs to boost blood donation rates among both student groups. Understanding these factors is essential for fostering a culture of regular blood donation among students in educational environments.

KEYWORDS

Blood donation, Medical students, Non-medical students, Private institutions, Barriers, Motivators

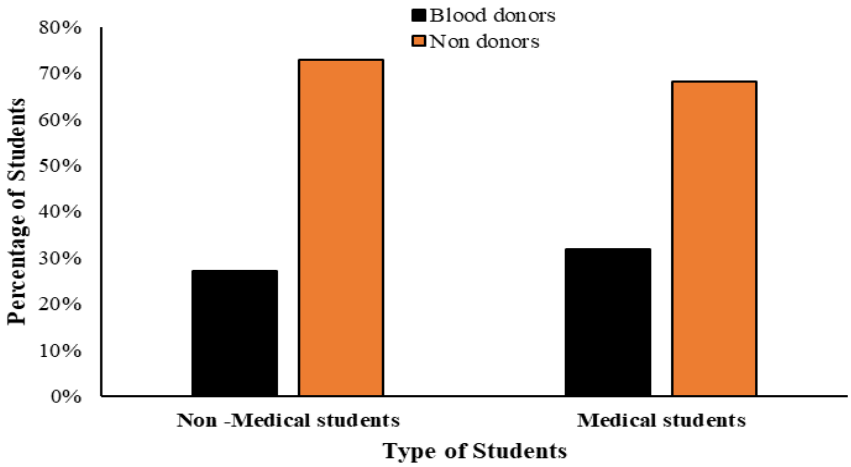
INTRODUCTION

In recent years, blood donation has emerged as a critical component in the healthcare sector, serving as a life-saving resource in various medical emergencies and procedures. Globally, approximately 118.5 million blood donations are collected each year. A striking disparity exists in blood donation rates across different income levels: high-income countries, with only 16% of the world's population, contribute 40% of these donations. The blood donation rate per 1000 people is 31.5 in high-income countries, markedly higher than the rates in upper-middleincome (16.4), lower-middle-income (6.6), and low-income countries (5.0).[1] This disparity highlights a crucial gap in blood donation participation worldwide, influenced by varying socio-economic and health care conditions Despite its significance, the rate of blood donation varies significantly among different demographic groups, particularly among students from diverse educational backgrounds.[2] This variation underscores a pressing need to understand the underlying factors influencing individuals' decisions to donate blood.[3] Existing literature predominantly focuses on general population trends, with limited research delving into the specific attitudes and behaviours of students in the medical and non-medical fields. Therefore, this study aims to bridge this knowledge gap by examining the barriers and motivators affecting blood donation among these distinct student populations.

METHODOLOGY

A set of standardized survey questions was developed and validated for assessing the barriers and motivators involved in blood donation. The students were selected randomly from both medical and non-medical educational institutions. The validated questions were developed and circulated to students utilizing the Google Forms platform. The survey targeted students aged 18 and above in both medical and non-medical educational institutions in and around Kumarapalayam (Namakkal district, Tamil Nadu, India). The questions covered various aspects, including awareness, attitudes, and practices related to blood donation. These questions were thoughtfully categorized into domains addressing different facets of blood donation.

RESULTS



"Figure 1": Percentage Distribution pattern of Blood Donors among medical and Non-medical students

Table 1: Response of the participants for the Questions related to motivating factors

S.No	Questions	Response to the Questions	Non-medical students N=675 N(%)	Medical students N=894 N(%)

1	**What drives your willingness to donate blood as a college student?**	The opportunity to save lives and help others in need.	118(17.48%)	192(21.47%)
		To contribute positively to society and my community.	42(6.22%)	53(5.92%)
		Encouragement from friends or family who have needed blood transfusions.	20(2.96%)	18(2.01%)
		Participation in college-organized blood donation drives.	15(2.22%)	21(2.34%)
		Recognizing the constant need for blood for emergency treatments.	28(4.14%)	21(2.34%)
		Not applicable -I have some other reasons	5(0.74%)	9(1%)
2	**Which personal benefits or incentives would motivate you to donate blood?**	Receiving health check-ups or blood tests at no cost.	94(13.92%)	116(12.97%)
		Gaining knowledge about my own blood type and health status.	57(8.44%)	99(11.07%)
		Being awarded community service hours or credits by my college.	18(2.66%)	33(3.69%)
		Receiving tokens of appreciation, such as gift cards or certificates.	10(1.48%)	21(2.34%)
		Feeling a sense of pride and personal achievement.	20(2.96%)	87(9.73%)
		Not applicable - I have some other reasons.	8(1.18%)	6(0.67%)
3	**How do the following institution/college factors motivate you to donate blood?**	The presence of regular blood donation camps on campus.	74(10.96%)	157(17.56%)
		Support and encouragement from college administration and faculty.	44(6.51%)	56(6.26%)
		Inclusion of blood donation in the college's health and wellness programs.	22(3.25%)	44(4.92%)
		Availability of information and resources about blood donation on campus.	20(2.96%)	58(6.48%)
		College credits or incentives for students who participate in blood donation.	28(4.14%%)	32(3.57%)
		Recognition or awards from the institution for contributing to blood donation drives.	21(3.11%)	31(3.46%)
		None of the above institutional/ college factors motivate me to donate blood.	6(0.88%)	4(0.44%)

Table 2: Response of the participants for the Questions related to barriers

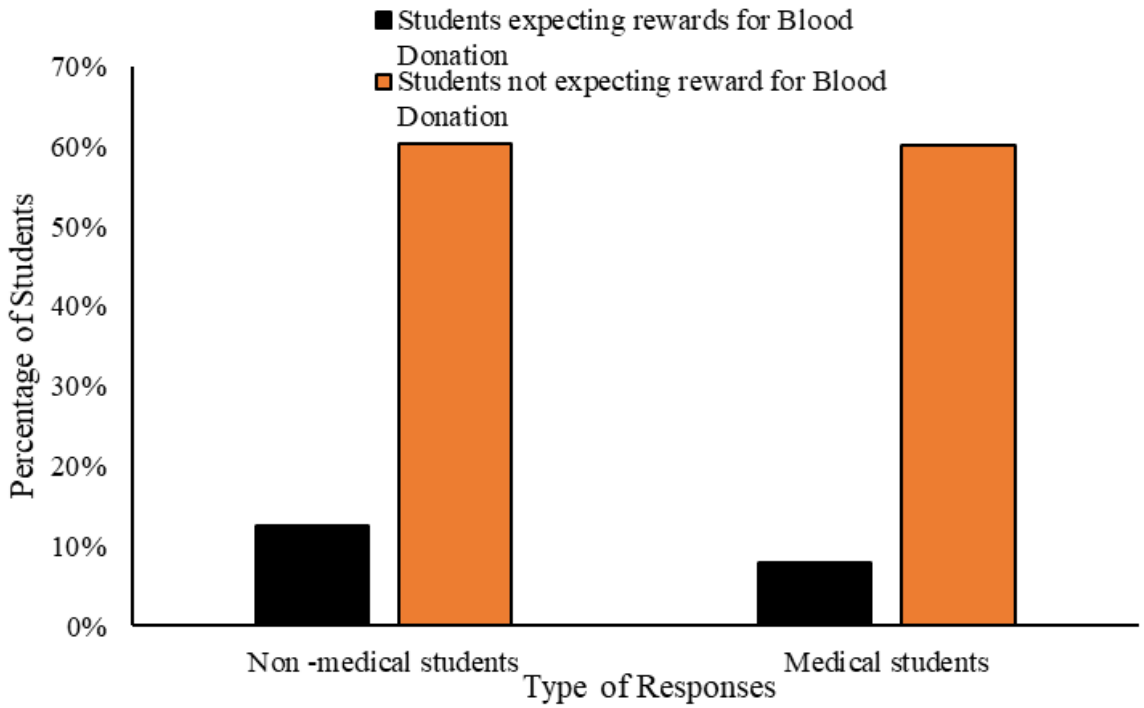
S.No	Questions	Response to the Question	Non-medical students N=675 N(%)	Medical students N=894 N(%)
1	Are you fearful about any health - related issues due to blood donation?	Concerns about weakness	201(29.77%)	269(30.08%)
		Experiencing dizziness, pain postdonation	30(4.44%)	95(10.62%)
		Fears of reduced immunity	81(12%)	69(7.71%)
		Risk of becoming anemic	22(3.25%)	121(13.53%)
		Potential for fever	44(6.51%)	44(4.92%)
		Chance of infection or disease transmission	15(2.22%)	30(3.35%)
		Worries about weight loss	75(11.11%)	55(6.15%)
		Current health conditions	79(11.70%)	185(20.69%)
		Not applicable - I have other reasons for not donating blood	10(1.48%)	8(0.89%)
2	Do any of the following personal or sociocultural factors affect your decision not to donate blood?	Religious beliefs prohibiting donation	52(7.70%)	25(2.79%)
		Lack of family support for donating blood	357(52.88%)	484(54.13%)
		Personal habits such as alcohol or tobacco use	53(7.85%)	15(1.67%)
		Other personal reasons	20(2.96%)	17(1.90%)
		Not applicable - I have other reasons for not donating blood	11(1.62%)	5(0.55%)
3	What logistical or informational issues prevent you from donating blood?	Inconvenient timing or location of donation centers	119(17.62%)	168(18.79%)
		Long waiting times at donation facilities	47(6.96%)	148(16.55%)
		Requirement to take leave from work or college	109(16.14%)	216(24.16%)
		Travel difficulties to the donation center	111(16.44%)	51(5.70%)
		Uncertainty about donation eligibility	87(12.88%)	55(6.15%)
		Insufficient information on how to donate	39(5.77%)	59(6.59%)
		Other logistical or informational barriers	9(1.33%%)	6(0.67%)
		Not applicable - I have other reasons for not donating blood	13(1.92%)	6(0.67%)
4	Are there any psychological or past experiences	Fear of needles	239(21.09%)	331(17.6%)
		Concerns about the health effects of donating	197(14.8%)	265(10.2%)
		Bad experiences from previous donation	51(3.27%)	44(2.79%)

	that discourage you from donating blood?	Other psychological reasons	16(9.09%)	20(8.61%)
		Not applicable - I have other reasons for not donating blood	6(26.9%)	4(34.8%)

Table 3: Response of the participants for the Questions related to barriers

S.No	Questions	Response to the Question	Non-medical students N=675 N(%)	Medical students N=894 N(%)
1	How do your academic commitments affect your ability to donate blood?	Class schedules conflict with donation center hours	140(13.09%)	76(8.50%)
		Academic workload is too heavy to allow time for donation	118(9.81%)	181(6.82%)
		Concern that donating blood may affect my academic performance (e.g., feeling weak or tired afterward)	137(12.72%)	212(10.29%)
		Examinations or deadlines around the time of donation drives	95(6.54%)	167(5.25%)
		Not applicable - I have other reasons for not donating blood	5(30.54%)	3(40.4%)
2	How do your academic and athletic commitments affect your ability to donate blood?	My class schedule doesn't allow me the time to donate.	180(15.63%)	209(8.38%)
		Athletic training and competitions leave me too fatigued to consider donating.	133(8.72%)	52(5.81%)
		I'm concerned about the recovery time after donation affecting my studies.	156(12%)	205(7.94%)
		There's a lack of blood donation drives that align with my free time between academic and sports commitments.	31(4.72%)	164(3.35%)
		Not applicable - I have other reasons for not donating blood	7(34.18%)	10(46.08%)
3	What institutional barriers prevent you from donating blood?	Lack of blood donation drives organized by college	184(16%)	213(9.06%)
		Inadequate information or awareness campaigns about blood donation on campus	44(6.54%)	56(6.26%)
		Absence of incentives or recognition for students who donate blood	125(7.27%)	52(5.81%)
		Unsupportive college policies regarding time off for donation	15(2.18%)	151(2.12%)
		Poor organization or management of blood donation events by the college	28(4%)	31(3.46%)
		Perception that the college does not prioritize health and wellness initiatives	94(2.54%)	152(2.23%)
		Not applicable -i have some other reasons	9(34.90%)	4(44.7%)
4	As a woman in college, what factor most significantly impacts your decision	Concerns about the impact on menstrual health	195(21.09%)	205(11.96%)
		Fear of anemia or other health issues specific to women	47(6.90%)	196(10.9%)
		Social stigma or misconceptions about women donating blood	32(4.72%)	126(3.13%)

	regarding blood donation?	Worry that donating blood may affect my energy levels	109(8%)	69(7.71%)
		Concerns about the implications of blood donation on future pregnancies.	10(1.45%)	21(2.34%)
		Family or societal pressure that discourages women from participating in medical or altruistic acts like blood donation outside the home.	18(2.54%)	20(2.23%)
		Availability of donation centers with femalefriendly facilities	81(4%)	24(2.68%)
		Not applicable - I have other reasons for not donating blood	4(24%)	3(32.99%)



"Figure 2" :Percentage distribution of Medical and Non-Medical students expecting reward for the Blood Donation

DISCUSSION

The purpose of the study is to identify the motivation factor and barriers in connection to the blood donation. This study reveals that a higher percentage of medical students (31.8%) have donated blood compared to non-medical students (27.11%). This difference may be attributed to the medical students' better understanding of the importance of blood donation due

to their academic background. The findings suggest a need for targeted awareness and educational programs to increase blood donation among non-medical students and this result also resembles or is similar to Alsalmi MA et al.,(2019)study[4] as these distributions shown in "Figure 1"

The data collected from 675 non-medical students and 894 medical students revealed interesting insights. Among non-medical students, the primary motivator for blood donation was the opportunity to save lives and help others in need, accounting for 17.48% of responses. This was closely followed by the desire to contribute positively to society and the community, with 6.22% of responses. Encouragement from friends or family who have needed blood transfusions and participation in college-organized blood donation drives were also cited as motivators, albeit to a lesser extent. On the other hand, among medical students, the primary motivator was also the opportunity to save lives and help others in need, with 21.47% of responses. Similarly, the desire to contribute positively to society and the community was also a significant motivator, with 5.92% of responses. Encouragement from friends or family who have needed blood transfusions and participation in college-organised blood donation drives were also mentioned, but at lower percentages compared to non-medical students, and this result also resembles or is similar to Bednall TC et al.,(2011)study[5] as these distributions shown in Table 1.

The data presented in this table sheds light on the personal benefits and incentives that can motivate individuals, both non-medical and medical students, to donate blood. The results indicate that receiving health check-ups or blood tests at no cost is the most significant motivator for non-medical students, with 13.92% of respondents citing this as a factor. Medical students, on the other hand, are more concerned with gaining knowledge about their own blood type and health status (11.07%). Both groups also value being awarded community service hours or credits by their college (3.69% and 2.66%, respectively). Other incentives, such as tokens of appreciation or a sense of pride and personal achievement, were less commonly cited by respondents. These findings suggest that institutions may consider offering health checkups or blood tests as a way to encourage blood donation, particularly among non-medical students. Additionally, providing information about blood type and health status may be particularly appealing to medical students who are interested in learning more about their health, and this result also resembles or is similar to Yuan S et al.,(2011)study[6] as these distributions shown in Table 1.

The data presented in this table highlights the logistical and informational issues that prevent individuals, both non-medical and medical students, from donating blood. The most

commonly cited barrier is the inconvenient timing or location of donation centers, with 17.62% and 18.79% of non-medical and medical students, respectively, citing this as a factor. Other logistical barriers, such as long waiting times, travel difficulties, and uncertainty about donation eligibility, were also frequently cited by respondents. Additionally, some individuals reported insufficient information on how to donate, highlighting the importance of clear and accessible communication about the donation process. These findings suggest that institutions may consider expanding their donation center locations and hours to better accommodate donors' schedules. Additionally, providing clear and concise information about the donation process and eligibility requirements may help to address some of the uncertainty and confusion reported by respondents and this result also resembles or is similar to Grossman B et al.,(2005)study[7] as these distributions shown in Table 1.

The study reveals that both non-medical and medical students share concerns about weakness and dizziness after blood donation, with 30% expressing this fear. Other worries include pain, reduced immunity, fever, and weight loss. Interestingly, non-medical students are more anxious about becoming anemic (12%) compared to medical students (7%). Health conditions deter some students from donating, with 11% of non-medical and 21% of medical students citing this as a reason. However, concerns about infection transmission are minimal, with only 2-3% of students mentioning it as a barrier and this result also resembles or is similar to Mahfouz MS et al.,(2021)study[8] as these distributions are shown in Table 2.

The study highlights those religious beliefs, particularly among non-medical students, pose a significant barrier to blood donation, with 7.70% of respondents citing it as a reason. Lack of family support was a major concern for both groups, affecting 52.88% of non-medical and 54.13% of medical students. Personal habits like alcohol or tobacco use played a role for 7.85% of non-medical and 1.67% of medical students. Addressing religious beliefs, promoting family support, and discouraging personal habits could enhance blood donation rates in the institution studied and this result also resembles or is similar to Tadesse T ‘Fernández Montoya A et al.,(2018)study[9,10] as these distributions shown in Table 2.

The table presents a study on the barriers and motivators in blood donation within a private institution, focusing on the logistical and informational issues that prevent individuals from donating blood. Among these challenges, the most common ones include inconvenient timing or location of donation centers, the need to take leave from work or college, and uncertainty about donation eligibility. These findings emphasize the significance of addressing these obstacles to promote blood donation participation. In total, these issues account for 88.91% of the reasons for not donating blood among non-medical students and medical students and this

result also resembles or is similar to Monteiro TH et al.,(2023)study[11] as these distributions are shown in Table 2.

The table explores the psychological or past experiences that might discourage individuals from donating blood in the context of a private institution. Fear of needles emerges as the most common psychological factor, affecting 21.09% of non-medical students and 17.6% of medical students. Other significant factors include concerns about the health effects of donating and negative past experiences. These psychological barriers contribute to 44.06% of the reasons for not donating blood among non-medical students and medical students. Addressing these psychological concerns and providing adequate support may help increase blood donation participation and this result also resembles or is similar to Zucoloto ML et al.,(2019)study [12] as these distributions are shown in Table 2.

The table highlights how academic commitments impact the ability of individuals to donate blood within a private institution. Conflicting class schedules and heavy workloads are the primary factors affecting 13.09% of non-medical students and 8.50% of medical students. Concerns about potential post-donation fatigue also contribute to the issue. These academicrelated barriers account for 32.31% of the reasons for not donating blood among non-medical students and medical students. Addressing these academic concerns and finding more flexible donation options may help increase blood donation participation among students and this result also resembles or is similar to Yuan S et al.,(2011)study[13] as these distributions shown in Table

3.

The table reveals that both academic and athletic commitments significantly impact blood donation among students in private institutions. Time constraints due to class schedules and athletic training affect 15.63% of non-medical and 8.38% of medical students, while concerns about post-donation fatigue and recovery time impact 12% of non-medical and 7.94% of medical students. Additionally, the lack of donation drives aligning with their free time affects 4.72% of non-medical and 3.35% of medical students. Overall, these factors contribute to 40.25% of reasons for not donating blood among both student groups. Addressing these challenges with flexible donation options could enhance participation rates in blood donation programs within the institution and this result also resembles or is similar to the Raghuwanshi B et al.,(2021)study[14] as these distributions are shown in Table 3.

The table illustrates institutional barriers impacting students' blood donation in a private institution. Non-medical students are hindered by the lack of organized blood drives (16%),

insufficient information and awareness campaigns (6.54%), absence of incentives for donors (7.27%), unsupportive college policies (2.18%), poor organization of events (4%), and perceived lack of priority for health initiatives (2.54%). Similarly, medical students face challenges due to these factors, albeit at slightly lower percentages. Additionally, a significant proportion of both groups (34.90% non-medical, 44.7% medical) cite other reasons not specified. To encourage blood donation, the institution must address these barriers comprehensively and prioritize initiatives to promote donation among students and this result also resembles or is similar to Padilla-Garrido N et al.,(2021)study[15] as these distributions shown in Table 3.

The table highlights various factors influencing female college students' decisions regarding blood donation. Key concerns include menstrual health impacts (21.09% non-medical, 11.96% medical), fear of women-specific health issues (6.90% non-medical, 10.9% medical), social stigma (4.72% non-medical, 3.13% medical), energy level worries (8% non-medical, 7.71% medical), and pregnancy implications (1.45% non-medical, 2.34% medical). Family or societal pressure affects 2.54% of non-medical and 2.23% of medical students, while the availability of female-friendly facilities impacts 4% of non-medical and 2.68% of medical students. A significant portion of students have unmentioned reasons for not donating blood (24% nonmedical, 32.99% medical). To enhance blood donation among females, institutions should address these factors and create a supportive environment. This result also resembles or is similar to Prados Madrona D, Manley H et al.,(2014)(2019)study[16,17] as these distributions are shown in Table 03.

The table shows the percentage of non-medical and medical students who believe they should be rewarded or paid for the blood they have donated. The majority of both non-medical and medical students (60.29% and 60.17% respectively) do not believe they should be rewarded or paid for their blood donation. However, a small percentage of non-medical students (12.59%) and medical students (7.94%) believe they should be rewarded or paid for their blood donation, and this result also resembles or is similar to Sadler A et al.,(2018)study[18] as these distributions shown in “Figure 2”.

CONCLUSION

The study conducted on non-medical and medical students' motivations and barriers in blood donation has provided valuable insights. The opportunity to save lives and contribute to society were the primary motivators for both groups, while logistical and informational issues, psychological factors, academic and athletic commitments, and institutional barriers emerged

as significant deterrents. The findings suggest that institutions could enhance blood donation participation by expanding donation center locations and hours, providing clear information about the donation process and eligibility requirements, addressing religious beliefs and family support, and creating a supportive environment for female students. Additionally, addressing psychological concerns, accommodating academic schedules, and promoting flexible donation options may also encourage more students to participate in blood donation programs.

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CONFLICT OF INTEREST

There is no conflict of interest.

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REFERENCES

1. World Health Organization. Blood safety and availability. Who.int. June 2, 2023. https://www.who.int/news-room/fact-sheets/detail/blood-safety-and-availability

2. Raykar, N. P., Kralievits, K., Greenberg, S. L., Gillies, R. D., Roy, N., & Meara, J. G. (2015). The blood drought in context. The Lancet. Global health, 3 Suppl 2, S4–S5.

3. Aschale, A., Fufa, D., Kekeba, T., & Birhanu, Z. (2021). Intention to voluntary blood donation among private higher education students, Jimma town, Oromia, Ethiopia: Application of the theory of planned behaviour. PloS one, 16(3), e0247040.

4. Alsalmi, M. A., Almalki, H. M., Alghamdi, A. A., & Aljasir, B. A. (2019). Knowledge, attitude and practice of blood donation among health professions students in Saudi

Arabia; A cross-sectional study. Journal of family medicine and primary care, 8(7), 2322–2327.

5. Bednall, T. C., & Bove, L. L. (2011). Donating blood: a meta-analytic review of selfreported motivators and deterrents. Transfusion medicine reviews, 25(4), 317–334.

6. Yuan, S., Hoffman, M., Lu, Q., Goldfinger, D., & Ziman, A. (2011). Motivating factors and deterrents for blood donation among donors at a university campus-based collection center. Transfusion, 51(11), 2438–2444.

7. Grossman, B., Watkins, A. R., Fleming, F., & Debaun, M. R. (2005). Barriers and motivators to blood and cord blood donations in young African-American women. American journal of hematology, 78(3), 198–202.

8. Mahfouz, M. S., Ryani, M., Saleh Hamzi, N. A., Zaeri, D. A., Dahdoh, A. A., Almalki, A. J., Ali Hakami, J. A., Ahmed Aqeeli, A. A., & Tawashi, I. H. (2021). Blood donation among university students: practices, motivations, and barriers in Saudi Arabia. Avicenna journal of medicine, 11(2), 70–76.

9. Tadesse, T., Berhane, T., Abraha, T. H., Gidey, B., Hagos, E., Grum, T., & Gerensea, H. (2018). Blood donation practice and associated factors among health professionals in Tigray regional state public hospitals, northern Ethiopia. BMC research notes, 11(1), 677.

10. Montoya A, Castillo J, Berrio A, Fernández A.(1996) .Actitudes, creencias y motivaciones en donantes y no donantes de sangre [Attitudes, beliefs, and motivations in blood donors and non-donors]. Sangre;41(6):427-440

11. Monteiro, T. H., Ferreira, Í. J. D. R., Junior, A. C. F. P., Chocair, H. S., & Ferreira, J. D. (2023). Barriers and motivations for blood donation: an integrative review. Hematology, transfusion and cell therapy, S2531-1379(23)02583-X.

12. Zucoloto, M. L., Gonçalez, T., Menezes, N. P., McFarland, W., Custer, B., & Martinez, E. Z. (2019). Fear of blood, injections and fainting as barriers to blood donation in Brazil. Vox sanguinis, 114(1), 38–46.

13. Yuan, S., Hoffman, M., Lu, Q., Goldfinger, D., & Ziman, A. (2011). Motivating factors and deterrents for blood donation among donors at a university campus-based collection center. Transfusion, 51(11), 2438–2444.

14. Raghuwanshi, B., & Maheshwari, A. (2021). Impact of alternative strategies to improve the pool of blood donation by off-hour donation: A pilot study and its future prospects. Journal of family medicine and primary care, 10(9), 3288–3291.

15. Garrido N, Herrera MD, Correa F, Martín I.(2021). Motivators, barriers and communication channels for blood donation in relation to students at a university in Spain. Transfus Apher Sci. ;60(6):103270.

16. Madrona D, Herrera MD, Jiménez D, Giraldo S, Campos R.(2014). Women as whole blood donors: offers, donations and deferrals in the province of Huelva, south-western Spain. Blood Transfus;12(1):s11-s20.

17. Manley, H., Sprinks, J., & Breedon, P. (2019). Menstrual Blood-Derived Mesenchymal Stem Cells: Women's Attitudes, Willingness, and Barriers to Donation of Menstrual Blood. Journal of women's health (2002), 28(12), 1688–1697.

18. Sadler, A., Shi, L., Bethge, S., & Mühlbacher, A. (2018). Incentives for Blood Donation: A Discrete Choice Experiment to Analyze Extrinsic Motivation. Transfusion medicine and hemotherapy : offizielles Organ der Deutschen Gesellschaft fur Transfusionsmedizin und Immunhamatologie, 45(2), 116–124.