ORIGINAL RESEARCH ARTICLE

Attitudes towards blood donation among students in different health sciences disciplines in Saudi Arabia

DOI: 10.29063/ajrh2024/v28i4.8

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Abstract

The objective of this research undertaking was to examine the attitudes of King Khalid University undergraduates enrolled in various health disciplines regarding blood donation. Undergraduates of health disciplines participated in this study. The survey questions were administered through Google Forms, and the data was imported into GraphPad Prism for visualization and analytical purposes. A greater proportion of participants were male, with males accounting for 63.2% of the sample, while females accounted for 36.8%. The findings given in this research illustrate a wide range of attitudes regarding the practice of blood donation. A notable percentage of the participants had a favorable predisposition towards engaging in voluntary blood donation. Nevertheless, a significant degree of variability was observed among individuals with regards to their attitudes toward several variables, including fear, motivation, and their preferred location for making donations. The participants expressed negative attitudes against the practice of importing blood and the recognition of personal accountability in engaging in blood donation for the sake of society. One potential solution to address the unfavorable attitudes among students towards blood donation is the implementation of educational programs focused on blood donation and its associated benefits. Additionally, incorporating motivational strategies could further enhance the effectiveness of these initiatives. As a result, this could have a positive impact on students and those in their immediate vicinity. *(Afr J Reprod Health 2024; 28 [4]: 71-77).*

Keywords: Blood donation, attitudes, undergraduate students, medical disciplines

Résumé

L'objectif de cette entreprise de recherche était d'examiner les attitudes des étudiants de premier cycle de l'Université King Khalid inscrits dans diverses disciplines de la santé concernant le don de sang. Des étudiants de premier cycle des disciplines de la santé ont participé à cette étude. Les questions de l'enquête ont été administrées via Google Forms et les données ont été importées dans GraphPad Prism à des fins de visualisation et d'analyse. Une plus grande proportion de participants étaient des hommes, les hommes représentant 63,2 % de l'échantillon, tandis que les femmes représentaient 36,8 %. Les résultats de cette recherche illustrent un large éventail d'attitudes concernant la pratique du don de sang. Un pourcentage notable de participants avaient une prédisposition favorable au don de sang volontaire. Néanmoins, un degré important de variabilité a été observé parmi les individus en ce qui concerne leurs attitudes envers plusieurs variables, notamment la peur, la motivation et le lieu préféré pour faire des dons. Les participants ont exprimé des attitudes négatives à l'égard de la pratique consistant à importer du sang et ont reconnu la responsabilité personnelle de s'engager dans le don du sang pour le bien de la société. Une solution potentielle pour lutter contre les attitudes défavorables des étudiants à l'égard du don de sang consiste à mettre en œuvre des programmes éducatifs axés sur le don de sang et ses avantages associés. De plus, l'intégration de stratégies de motivation pourrait encore améliorer l'efficacité de ces initiatives. Cela pourrait ainsi avoir un impact positif sur les étudiants et leur entourage immédiat. *(Afr J Reprod Health 2024; 28 [4]: 71-77).*

Mots-clés: Don de sang, Attitudes, étudiants de premier cycle, disciplines médicales

Introduction

Blood donations are of utmost importance due to the utilization of blood components in various medical circumstances such as surgical procedures, bleeding disorders, and both acquired and congenital hematological diseases[1]. One element contributing to the rise in requests for blood donation is the limited storage duration of blood components, which necessitates a continual supply of incoming donations. Hence, consistently acquiring blood donors is a key difficulty[1], as donation remains the major source of blood and blood components worldwide. Even though extensive and promising research has been conducted on alternatives, a true substitute for

blood and blood components is still not available[2]. Thus, despite the annual collection of a substantial amount of blood units, demand continues to outpace supply[2]. According to the World Health Organization, an estimated 118.54 million blood donations are collected globally[3]. Notably, high-income countries, which represent only 16% of the global population, account for approximately 40% of the total blood donations collected[3]. This plainly illustrates the income level disparities between countries and their correlation with blood availability. Ultimately, the act of donating blood is significant and has garnered considerable attention due to its impact on individual health, irrespective of the prevailing circumstances. Timely provision of blood is deemed imperative. Provision of safe blood can be ensured through the contribution of voluntary donors, particularly those who do not receive compensation, as this approach minimizes the potential for transmission of infections compared to remunerated donors. Thus, promoting the participation of individuals who donate without receiving compensation is crucial[4].

Hospital-based blood transfusion services play a crucial role in Saudi Arabia by offering complete services that encompass many stages, including donor recruitment and the distribution of blood units to patients requiring transfusions. Blood donors are of two main categories: involuntary or replacement donors, who are typically relatives or close acquaintances of the recipient, and voluntary non-remunerated donors[5]. According to one report, the level of satisfaction regarding the prevalence of blood donation among Saudi citizens is relatively low. This phenomenon can be attributed to a multitude of factors that encompass the dissemination of knowledge regarding blood donation as well as prevailing attitudes towards it[6].

Throughout history, diverse factors have been recognized as influential in both facilitating and hindering blood donation motivation and participation; variables that have been examined include altruism, education regarding the importance of donating blood, fear, and incentives[7].

According to a recent report, the populace of Saudi Arabia exhibits a satisfactory level of awareness regarding blood donation, as well as its significance to both healthcare providers and society at large[4]. Nevertheless, males exhibit a higher inclination towards blood donation in comparison to their female counterparts[6,8], and individuals who harbor negative attitudes toward blood donation may potentially impede the availability of sufficient blood supply.

The objective of this study is to assess the attitudes of undergraduate students enrolled in different medical disciplines across multiple health colleges at King Khalid University towards blood donation. Additionally, its objective is to establish comparisons with prior studies.

Methods

Study design and participants

The survey questions were developed and evaluated by a faculty member from the Department of Medical Laboratory Sciences at King Khalid University. The initial survey questions were formulated in the Arabic language; however, an English translation was created to aid in the process of research and reporting. The utilization of Google Forms, dedicated software designed for the purpose of survey administration, facilitated the creation of a dependable and user-centric survey instrument. In order to gather a sufficient number of data, the questionnaire was disseminated to a cohort consisting of 106 undergraduate students from different medical disciplines across several health colleges at King Khalid University. The survey's introduction included concise explanations of the study's extent and goals. Participant gender was collected, and a series of questions was asked to assess their attitudes. All participants were informed that their participation was completely optional, and they had the option to withdraw at any point if they wished to do so. Only unmarried male and female students pursuing a bachelor's degree in the medical fields at King Khalid University were eligible for participation. Exclusion criteria consist of students from non-medical disciplines in other faculties within or outside the university. Figure 1 illustrates a diagram of the research process from start to finish.

The sample size was calculated using Calculator.net, [https://www.calculator.net/sample-size-calculator.html]. A study by Majdabadi *et al* assessed attitudes levels of blood donation among students at the Semnan University of Medical

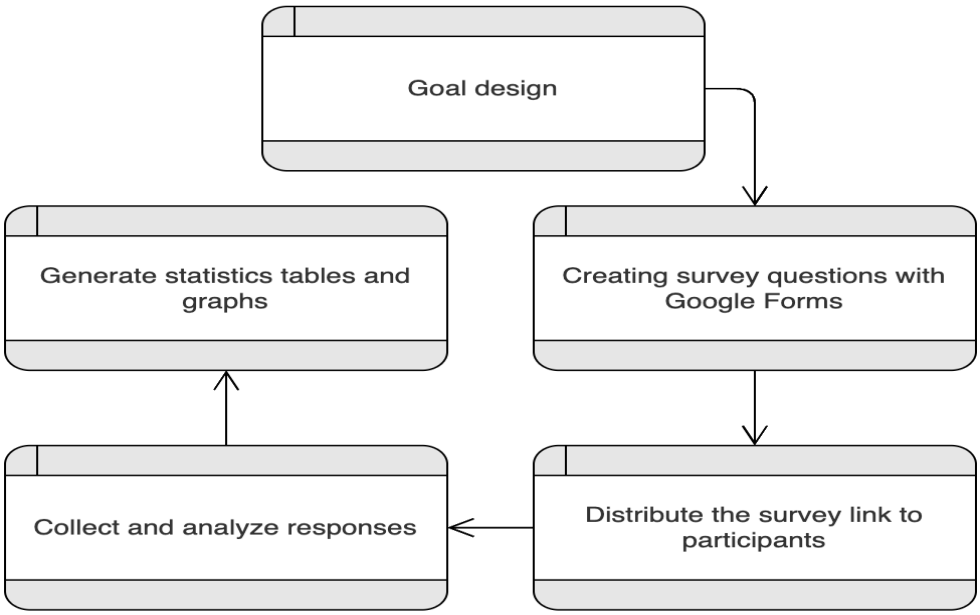


Figure 1: A diagrammatic representation of the study

Sciences finding that only 17.69% participants had positive attitudes[9]. With a prevalence of 17.69%, a confidence level of 90%, and a 7% margin of error, the required sample size was estimated to be 81 participants.

Data analysis

Google Forms allowed for efficient data management and collection. After processing responses, the site displayed the results in the form of numerous visual representations. GraphPad Prism (version 9.00 for Mac, GraphPad Software, San Diego, CA) was used to analyze the data once the original study was finished.

Ethical considerations

The study was granted approval by the King Khalid University Ethical Committee on Scientific Research (ECM#2023-2212; HAPO-06-B-001). Each participant was provided with an assurance that their replies would be used solely for academic purposes.

Results

The main objective of this investigation was to determine the attitude of undergraduate students studying in the medical fields at King Khalid University toward blood donation (Table 1 and Figure 2). The current study population consists of 106 participants, of which 63.2% were males and 36.8% females (Figure 2). Participants were surveyed regarding their awareness of their blood type with the purpose of evaluating their preparedness to donate blood in the future, should the need arise for a family member, acquaintance, or stranger. Based on the findings summarized in Table 1, respondents possess a satisfactory level of knowledge regarding their blood group. Participants were additionally queried on many aspects to examine their perspectives regarding elements that may influence their inclination or reluctance towards blood donation. Factors that influence the decision-making process concerning blood donation include concerns related to the fear of medical tools and potential outcomes of the donation, the risk of acquiring infections, the health status of the donor, the availability of suitable donors, and other considerations besides. This range of prospective circumstances was presented to individuals who had not previously participated in donation efforts. It is important to acknowledge that a considerable percentage of the participants did not offer a rationale for their choice of not participating in making a donation, whilst others articulated multiple reasons for choosing not to donate (Table 1). Overall, around 23.6% of the subjects exhibited a history of donating (Table 1).

Participants were subsequently evaluated in terms of the variables that may influence individuals' inclination to make donations. That is,

Table 1: Blood donation motivators and barriers among undergraduates' students in medical disciplines (n=106)

Prompt	Total 106		Male 67		Female 39	
	n	%	n	%	n	%
Do you know your blood type?						
Yes	96	90.56	64	60.4	32	30.2
No	10	9.43	3	2.8	7	6.6
If you have never donated blood, what is the primary reason?						
Fear (needles, feeling dizzy, etc.)	06	5.7	4	3.8	2	1.9
Have HIV or AIDS after donating blood	01	0.9	1	0.9	0	0.0
Never have I been requested to donate blood	11	10.4	8	7.5	3	2.8
My health prevents me from donating blood	14	13.2	3	2.8	11	10.4
I don't have the time to donate blood.	11	10.4	10	9.4	1	0.9
There is no particular reason	38	35.8	24	22.6	14	13.2
I have already donated blood, so it is not applicable	25	23.6	17	16.0	8	7.5
What is the greatest motivation for you, as a student, to donate blood?						
Money or other rewards for every blood donation	15	14.2	8	7.5	7	6.6
Authorized certificates and honors	33	31.1	19	17.9	14	13.2
Additional academic and grade support	58	54.7	40	37.7	18	17.0
I am willing to donate blood						
My family	04	3.8	3	2.8	1	0.9
My family and relatives	03	2.8	3	2.8	0	0.0
My family, relatives, and friends	07	6.6	5	4.7	2	1.9
As a volunteer, I help everyone	92	86.8	56	52.8	36	34.0

Notes: *HIV, human immunodeficiency virus; AIDS, Acquired immunodeficiency syndrome*

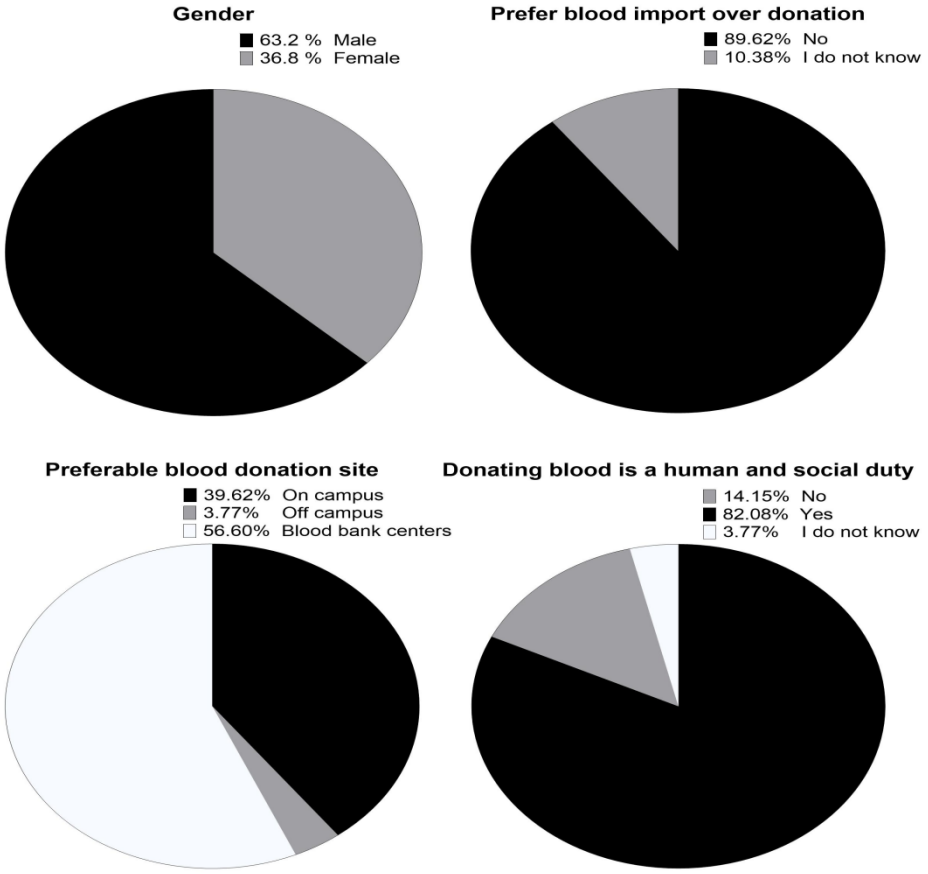


Figure 2: Attitudes toward blood donation among undergraduate students in different medical disciplines

various motivational factors were proposed to the participants in order to ascertain the primary motivating element that influences blood donation. These factors encompassed monetary rewards or awards, official certificates, and honors, as well as academic assistance and support in terms of grades. As illustrated in Table 1, the data indicates that a majority of student participants prioritize further academic and grade support over monetary incentives, certificates, and accolades.

Finally, to assess the perspectives of participants regarding factors that may promote blood donation, a series of inquiries was formulated that encompassed aspects such as donation locations and the importation of blood. The results depicted in Figure 2 demonstrate a prevailing inclination among participants to refrain from importing blood, favoring instead the act of making donations. Additionally, the data reveal a notable preference for donating blood at specialized blood bank centers over alternative places. Additionally, the overwhelming majority of participants regarded the act of donating blood as a fundamental human and societal responsibility (Figure 2). Moreover, they expressed a willingness to donate blood as volunteers for the benefit of all individuals if the need arises (Table 1).

Discussion

The act of donating blood is widely recognized as a fundamental and routine procedure. It provides healthcare personnel with units that are crucial for ensuring the protection of individuals requiring assistance. However, despite the regular occurrence of blood donation in daily life, global demand is growing, hence raising concerns over motivating and encouraging eligible individuals to engage in this altruistic act. It is imperative that individuals are actively engaged in blood donation, as having sufficient blood supply confers significant advantages to communities. In this investigation, we assessed the attitudes of King Khalid University undergraduate students in the health disciplines toward blood donation. Blood donations are frequently organized on university campuses, and some students enrolled in health sciences colleges are frequently exposed to patients and cognizant of the need for blood. The objective of this research endeavor was to ascertain whether these two variables could potentially enhance participation rates.

The study encompassed a sample of 106 undergraduate students, both male and female, who are pursuing bachelor's degrees in diverse medical disciplines. The students were surveyed regarding their blood group, and a majority were found to be aware of their blood group. This discovery aligns with prior documented results in Saudi Arabia, where a research demonstrated that more than two-thirds of health students accurately disclosed their blood type[10]. One notable aspect of our study is the high level of awareness of blood type, as seen by over 90% of respondents indicating knowledge of their own blood type. The observed discrepancy in proportions between the current study and the aforementioned study could potentially be attributed to the fact that participants in the former study were in the early stages of their medical education, resulting in limited availability of medical knowledge.

The primary focus of our study revolved around examining the underlying factors that drive individuals to engage in blood donation. The objective was to leverage these incentives in order to promote more blood donations among students, ultimately leading to positive outcomes for others.

Interestingly, a majority of participants chose extra educational assistance and grade support over alternative options. This is a notable difference from the responses previously reported for students at other universities, in which religious motivations were cited as the primary reason for blood donation[11], or to aid their family or friends[12]. The observed discrepancy can be attributed to the specific factors that were chosen for inclusion in the current investigation. Upon presenting the same query to a representative sample of the general population, it was found that the principal incentive was the provision of a day off[13]. It is imperative to acknowledge that contemporary students encounter stress as a result of the limited availability of job prospects. Consequently, a considerable proportion of individuals opt to prioritize the pursuit of higher scores in order to improve their Grade Point Average (GPA), so increasing their potential for accessing a wider range of opportunities.

One of the main aims of the study was to ascertain the factors that have impacted the decision of some individuals to remain away from

participating in blood donation up to now. Surprisingly, "no specific reason" was the most frequently given response by the participants, making it even more challenging to address this aspect. This is not consistent with the other studies that found that the majority of undergraduate students were concerned about being infected with viruses like HIV or hepatitis B and C[12], while in another study, the majority of students conveyed that the notion of blood donation did not cross their minds[13]. The above-mentioned factors, which were emphasized in both studies, can be effectively addressed by creating comprehensive health education programs aimed specifically at students. These programs have the ability to successfully address widespread misconceptions about blood donation, such as concerns about infection. Additionally, reinforcing the significance of altruistic acts such as blood donation can serve as a reminder to students about the necessity of aiding others in need.

In the present investigation, a remarkable and unforeseen response was elicited from the participants when queried about the individuals for whom they would be inclined to donate blood. A significant majority, exceeding 90% of the respondents, expressed their willingness to donate blood to anyone requiring it. Although the possible responses contained important options such as relatives, family, and friends, respondents preferred the aforementioned option. A comparable proportion of altruistic responses were observed in another study of Saudi health profession students from 40 Saudi universities registered with the Ministry of Education when asked about their willingness to donate blood to anonymous patients[14]. The optimistic outlook displayed by university students instills considerable optimism for the present generation, fostering enhanced societal collaboration. This is particularly significant given the substantial surge in the need for blood donations.

Furthermore, the students' reaction to the prohibition of blood imports from abroad into Saudi Arabia is consistent with the previously mentioned stance regarding their willingness to donate to any individual. This indicates that the students perceive that their endeavors are not solely their own, which signifies that they collectively acknowledge the importance of their own contributions. Conversely, the prevailing mindset strongly advocates for the notion that blood donation constitutes a collective obligation within society, applicable to all individuals, and is regarded as a commendable endeavor particularly among the present cohort of health science students. Once more, our findings shown a level of similarity to a previous study, wherein a majority of students expressed their disapproval towards the concept of blood importation[14].

Finally, blood donation site may play an important role in attracting more students to donate. To understand this factor better, participants were asked about their preferred blood donation site and whether an in-campus campaign could help them donate blood. However, respondents indicated that they tend to donate blood in blood donation centers at hospitals more than at other sites. This is unexpected, as participants in another study seem to like the idea of bringing blood donation on campus[14]. The underlying reasoning behind the different current attitudes among students enrolled in the medical disciplines at King Khalid University with relation to blood donation sites lacks clarity. One plausible explanation is that students may experience a sense of security while donating blood at medical donation centers located within hospitals, as these facilities are equipped to provide optimal medical assistance in the event of any unforeseen medical needs.

Conclusion

This research conducted an examination of the perspectives held by undergraduate students majoring in medical disciplines at King Khalid University with respect to blood donation. The findings of the study indicate that leveraging academic incentive can serve as a means to encourage student participation in blood donation activities. The survey responses also revealed that students who had never engaged in blood donation exhibited several variables that influenced their decision to abstain from this activity, including one where no specific reasons was provided. In contrast, the participants shown a proclivity to contribute to others need assistance, irrespective of their familial ties, acquaintanceship, or unfamiliarity. This study's limitation is that the research was conducted at only one educational institution. Conducting a study on university

students from various regions of Saudi Arabia would potentially improve the research. With an increased number of participants, these conclusions could be strengthened. Hence, it is advisable to reassess the situation at a later time in order to acquire data regarding the blood donation attitudes of students, utilizing a more extensive sample size.

Acknowledgments

The author expresses gratitude to the Deanship of Scientific Research at King Khalid University for financially supporting this work through the Small Group Research Project under grant number RGP1/222/44. I would also want to express my gratitude to SERVICESCAPE (www.servicescape.com) for their assistance with English language editing**.** I am thankful to Visual Paradigm Online for providing diagram-making services.

Conflict of interest

The author declares no conflicts of interest.

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