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Factors Influencing the Levels of Recruitment for Blood Donations in Saudi Arabia

Yousef Duhaim A. Al-Rashdi[1], Saleh Hadi Alharbi[2], Fahad A. Alateeq[2], Ibrahim Bin Ahmed[2], Abdul Rahman Ali A. Alsogair[1], Thamer Z. Aldugieman[1] and Hussain Gadelkarim Ahmed[2]*

[1] *College of Medicine, University of Hail, Hail, Saudi Arabia*

[2] *Faculty of Medicine, Al-Imam Mohammad Ibn Saud Islamic University, Riyadh, Saudi Arabia*

**Corresponding e-mail: hussaingad5@gmail.com*

ABSTRACT

Background: *Understanding the blood donor motivations is essential in successful efficient donor recruitment and retention strategies. Therefore, the objective of this study was to assess some factors that influence the levels of recruitment for blood donations in Saudi Arabia.* ***Methodology:*** *This is a cross-sectional survey conducted in the city of Hail, Northern Saudi Arabia. Data for blood donation was obtained from 700 Saudi volunteers living in the city of Hail. Participants were randomly selected by simple random regardless of age, gender, and education or occupation.* ***Results:*** *The overall individuals, who made a previous donation was 355/700 (50.7%). When the participants were asked whether they made a previous unavoidable donation, 156/355 (44%) answered: "Yes, have a previous donation for relative or friend". On asking the participant "did you go intentionally to donate or you got over it by a coincidence", about 266/700 (38%) participants, answered "yes I use to go for donation purposely" and 65/700 (9.3%) answered, "I did it as coincidence".* ***Conclusion:*** *Only a small number of people intending to give a voluntary blood donation, which might be due to lack of awareness towards blood donation. The great majority of those experienced previous blood donations were due to unavoidable donation (for relative or friend). Religious, education, occupation factors should be considered in recruitment besides other known factors.*

Keywords: Blood donation, Donors, Saudi Arabia, Voluntary donation

INTRODUCTION

Blood donation can save lives of individuals who have lost the excessive volume of blood as a result of serious accidents, new medical and surgical procedures, civil conflicts, and military wars as well as for patients who have become severely anemic because of serious hematological diseases or treatments such as cancer therapy [1]. Blood donation is the remarkably safe medical procedure. However, attitudes, beliefs, and level of knowledge may affect it [2]. For many years, family blood donors have been considered less safe than volunteer non-remunerated blood donors and are actively discouraged by international organizations and affluent countries that support agencies for developing countries. In addition to safety, pressure and coercion were considered unethical [3].

The World Health Organization (WHO) encourages that blood donation becomes voluntary and unremunerated [4]. However, there are three types of donors; voluntary, family replacement and remunerated. Moreover, donors are further classified according to the frequency of donation into new or first time and sporadic or regular donors [5]. The safest blood is found among donors who donate their blood voluntarily once or twice a year [6]. Knowledge, attitude and practice surveys have been used in many countries to understand factors that influence blood donation and as the basis for communication and donor mobilization strategies [7].

To ensure an adequate supply of blood, collection centers must design campaigns that successfully recruit and maintain an active donor pool. Understanding the factors that motivate and deter individuals from donating may help centers develop targeted recruitment campaigns [8]. Although research on blood donor motivation abounds, most studies have typically focused on small sets of variables, used different terminology to label equivalent constructs,

and have not attempted to generalize findings beyond their individual settings. The current study sought to synthesize past findings into a unified taxonomy of blood donation drivers and deterrents and to estimate the prevalence of each factor across the worldwide population of donors and eligible non-donors [9]. Altruism was the most common general motive for donating blood and also for continuing to be an active blood donor. Yet, for the first blood donation, direct 'influence from friends/relatives', 'media appeal' and other types of recruitment were more commonly reported as reasons or motives for donating blood than altruism [10].

Although overall altruism and inconvenience were the major motivating factor and deterrent for blood, some demographic differences existed in donor attitude toward incentive programs and preference for the method of contact used by blood centers for recruitment purposes [11]. In Saudi Arabia, the popularity of blood donation was less than the desired amount, perhaps due to mistaken beliefs, poor knowledge, and negative attitude to donation. Educational programs are necessary to increase the level of knowledge and to improve the attitude of the Saudi public toward blood donation [12]. Therefore, the objective of this study was to assess some factors that influence the levels of recruitment for blood donations in Saudi Arabia.

PATIENTS AND METHODS

This is a cross-sectional survey conducted in the city of Hail, Northern Saudi Arabia. Data about blood donation were obtained from 700 Saudi volunteers living in the city of Hail. Participants were randomly selected by simple random regardless of age, gender, and education or occupation.

A purposeful questionnaire was designed and used for obtaining the necessary data. The following information was obtained from each participant: age, sex, and education level and occupation sector. Questions regarding awareness about blood donation were also included, which comprised: previous donation, voluntary donation, donation pattern, personal factors, and donation entity factors.

Data Analysis

Statistical Package for Social Sciences (version 16) was used for analysis and to perform Pearson Chi-square test for statistical significance (p-value). The 95% confidence level and confidence intervals were used. The $p<0.05$ was considered statistically significant.

Ethical Consent

Each participant was asked to sign a written ethical consent during the questionnaire's interview. The informed ethical consent form was designed and approved by the ethical committee of the College of Medicine (University of Hail, Saudi Arabia) Research Board.

RESULTS

This cross-sectional survey included 700 volunteers, their ages ranging from 18 to 66 years with a mean age of 30 years. Out of the 700 contributors, 429 (61.3%) were males and 271 (38.7%) were females, giving males' females' ration of 1.58 to 1.00.

As described in Table 1, the great majority of the participants were at the age group 30-39 years representing 236/700 (33.7%), followed by age range representing 272/700 (24.6%). For males, most of the participants were of age 20-29 years followed by 30-39 years representing 163 (38%) and 154 (36%), in that order. For females, most of the participants were at age range 20-29 years followed by 30-39, representing 109 (40%), and 82 (30%), respectively (Figure 1).

Table 1 Distribution of the contributors by demographical characteristics

Category	Males	Females	Total
Age			
<20 years	56	40	96
20-29	163	109	272
30-39	154	82	236
40+	56	40	96
Total	429	271	700

Education			
General	163	128	291
Higher	266	143	409
Total	429	271	700
Occupation			
Education sector	155	105	260
Military	81	22	103
Health	29	24	53
Free work	51	36	87
Others	113	84	197
Total	429	271	700

In respect to education level, the majority of the participants were with higher education level representing 409/700 (58%) and the remaining 291/700 (42%) were with general education level. For both males and females the majority of participants were with at higher education level representing 266/429 (62%) and 143/271 (52.8%) (Table 1, Figure 1).

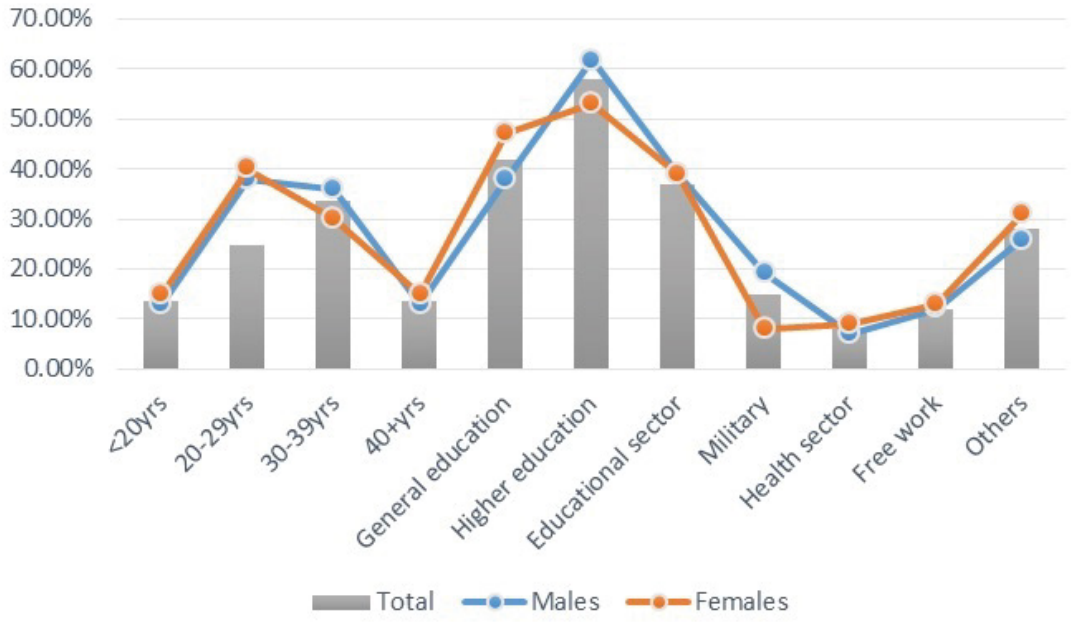

Figure 1 Description of study subjects by sex and demographical characteristics

With regard to the occupation, most of the participants were in the education sector followed by the military sector, representing 260/700 (37%), and 105/700 (15%), respectively. For males, most of the study subjects were in the education sector followed by the military, constituting 155/429 (36%) and 81/429 (19%). For females, most of the participants were at the education sector followed by free work representing 105/271 (39%) and 36/271 (13%), in this order (Table 1, Figure 1).

The overall individuals, who made a previous donation was 355/700 (50.7%). When the participants were asked whether they made a previous unavoidable donation, 156/355 (44%) answered "yes have a previous donation for relative or friend" and the remaining 87.7% have not experienced compulsory blood donation. On asking the participant "did you go intentionally to donate or you got over it by a coincidence", about 266/700 (38%) participants, answered "Yes I use to go for donation purpose" and 65/700 (9.3%) answered, "I did it as coincidence". On asking them whether they did a paid blood donation, 36/700 (501%) answered "Yes". On asking them whether they were forced to donate through governmental requirement, 20/700 (2.9%) answered "Yes".

On asking them, "What do you prefer to donate to", about 243(34.7%) prefer to donate to governmental hospital, 20(2.9%) to private hospitals, 16(2.3%) to regional blood back, 7(1%) to Red Crescent and 44(6.2%) to blood donation campaigns (Figure 2).

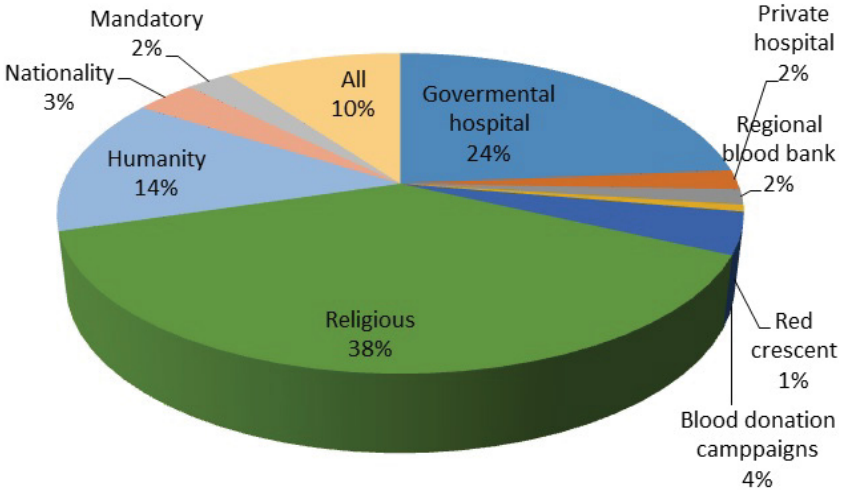

Figure 2 Description of the study population by factors influence the recruitment of blood donation

The most motivating factors for blood donation include religious obligation 394(56.3%), humanity responsibilities 142(20.3%), national obligation 35(5%), mandatory 26(3.7%), all of the preceded factors 103(14.7%) (Figure 2).

On asking the participants, whether they recommend paid blood donation for health affairs, about 195 (27.9%) agreed on the recommendation. On asking them whether there is an urgent need for awareness campaigns, around 648 (92.6%) agreed. About 447 (63.9%) believed that the best way to spread blood donation awareness is through blood donation campaigns, about 335 (47.9%) is through media, and 200 (28.6%) is through medical personnel.

Education

With regard to blood donation characteristics and education, about 355/700 (50.7%) were found with a previous history as donors. Out of 355 previous donors, 121/291 (41.6%) were in general education and 234/409 (57.2%) were in higher education. About 240/355 (67.6%) had a voluntary donation, of whom 79/291 (27%) were in general education and 161/409 (39.4%) were in higher education. About 266/355 (75%) have regular donation pattern, of whom 94/291 (32.3%) were in general education and 172/409 (42%) were in higher education. About 65/355 (18.3%) have regular donation pattern, of whom 22/291 (7.6%) were in general education and 43/409 (10.5%) were in higher education. About 36/355 (10%) have regular donation pattern, of whom 15/291 (5.2%) were in general education and 21/409 (5.2%) were in higher education (Table 2, Figure 3).

Table 2 Description of the study subjects by education and donation characteristics

Category	General education	Higher education	Total
Previous donation			
Yes	121	234	355
No	170	175	345
Total	291	409	700
Voluntary donation			
Yes	79	161	240
No	212	248	460
Donation pattern			
Regular donation	94	172	266
Donated as coincidence	22	43	65
Paid donation	15	21	36

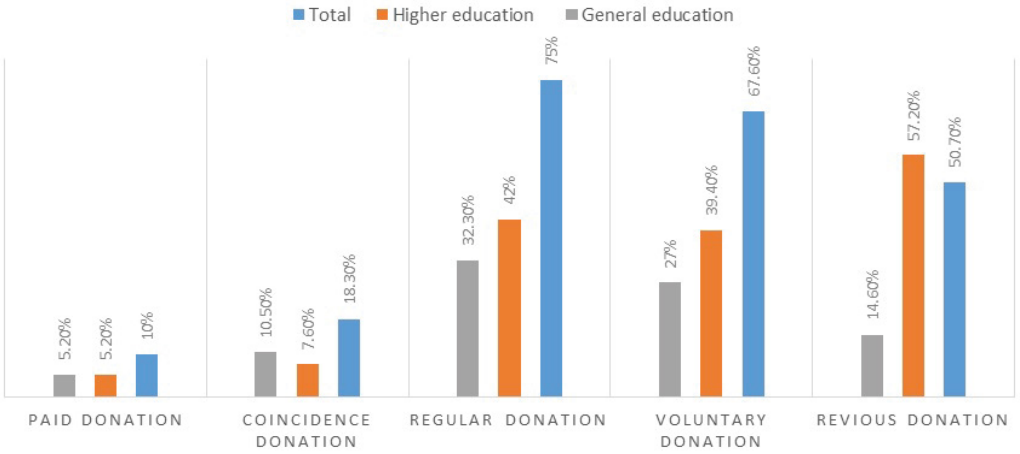

Figure 3 Description of the study subjects by education and donation characteristics

The description of the study subjects by education donation motivated factors was summarized in Table 3. With regard to the personal factors, the majority of the participants were motivated by religious and humanity. With regard to the donation entities, most people prefer to donate to governmental hospitals and donation campaigns. All factors were more apparent among higher educated people compared among those with primary education.

Table 3 Distribution of the study subjects by education donation motivated factors

Category	General education	Higher education	Total
Personal factors			
Religious	172	222	394
Humanity	53	89	142
Nationality	14	21	35
Obligotory	10	16	26
All	42	61	103
Donation Entity factors			
Governmental hospital	90	153	243
Private hospital	3	17	20
Regional blood bank	6	10	16
Red cresent	1	6	7
Donation campaigns	14	30	44

Occupation

According to each occupation group, the previous blood donation was found in 134/260 (51.5%), 74/103 (71.8%), 28/53 (52.8%), and 45/87 (51.7%) of the education sector, military, health sector and free work, respectively. The voluntary blood donation was found in 72/260 (27.8%), 65/103 (63%), 21/53 (39.6%), and 22/87 (25.3%) of the education sector, military, health sector and free work, respectively. The Regular blood donation was found in 100/260 (38.5%), 67/103 (65%), 23/53 (43.4%), and 26/87 (30%) of the education sector, military, health sector and free work, respectively. The coincidence blood donation was found in 23/260 (8.8%), 11/103 (10.7%), 5/53 (9.4%), and 12/87 (13.8%) of the education sector, military, health sector and free work, respectively. The paid blood donation was found in 8/260 (3%), 15/103 (14.6%), 3/53 (5.7%), and 4/87 (4.6%) of the education sector, military, health sector and free work, respectively (Table 4, Figure 4).

Table 4 Distribution of the study subjects by occupation and donation characteristics

Category	Educational sector	Military	Health	Free work	Other	Total
Previous donation						
Yes	134	74	28	45	74	355
No	126	29	25	42	123	345
	260	103	53	87	197	700

Voluntary donation						
Yes	72	65	21	22	60	240
No	188	38	32	65	137	260
Donation pattern						
Regular donation	100	67	23	26	50	266
Donated as coincidence	23	11	5	12	14	65
Paid donation	8	15	3	4	6	36

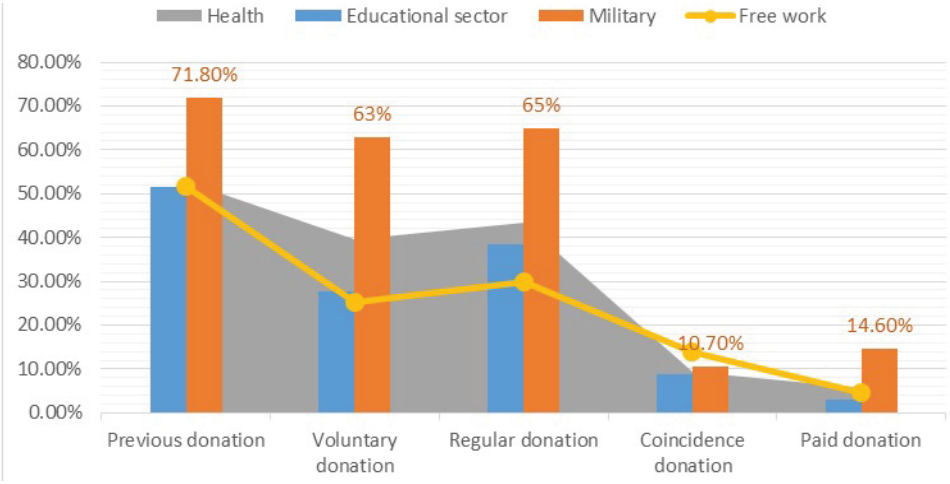

Figure 4 Description of the study subjects by Occupation and donation characteristics

Table 5 summarized the distribution of the study subjects by occupation donation motivating factors. Most of the participants were motivated by religious obligation followed by humanity, particularly among those in the educational sector and military as representing the biggest groups.

Table 5 Distribution of the study subjects by occupation donation motivated factors

Category	Educational sector	Military	Health	Free work	Other	Total
Personal factors						
Religious	117	67	25	53	132	394
Humanity	50	13	13	17	49	142
Nationality	22	1	2	2	8	35
Obligotory	15	1	5	1	4	26
All	56	21	8	14	4	103
Total	260	103	53	87	197	700
Donation Entity factors						
Govermental hospital	84	69	18	27	45	243
Private hospital	14	0	3	2	1	20
Regional blood bank	6	3	2	3	2	16
Red cresent	4	0	1	2	0	7
Donation campaigns	3	1	0	0	4	8

DISCUSSION

Understanding blood donor motivations is essential for successful efficient donor recruitment and retention strategies. Therefore, the objective of this study was to assess some factors that influence the levels of recruitment for blood donations in Saudi Arabia. The sample of the present study was taken randomly regardless of the demographic characteristics of the participant, but the majority of the participants were relatively more educated and with a relatively younger age. In Saudi Arabia, the insufficiency of blood donors and augmented request for blood is a significant health concern. Finding means to raise donor recruitment and retention is a priority.

In the present study, about 50.7% of the participants have a previous experience of blood donation. About 44% of

the donated individuals have made it as an unavoidable donation to a family member or a friend. Although there is a lack of literature from Saudi Arabia in this regard, most of those donated as an unavoidable donation might not give a voluntary donation.

In the present study on asking the participant "did you go intentionally to donate or you got over it by a coincidence", about 38% participants, answered "Yes I use to go for donation purpose" and 9.3% answered, "I did it as coincidence". These findings indicate an urgent need for utilizing motivating factors that can increase the potentiality of recruitment for blood donation in Saudi Arabia.

With regard to the personal factors that may increase the level of recruitment for blood donation, religious obligation and humanity passion (altruism). In a previous study from Saudi Arabia, about 91% of the participants agreed that blood donation is a religious obligation [13]. Thus, religion should be considered in campaigns for blood donation recruitment in Saudi Arabia. Altruism was the most common general motive for donating blood and also for continuing to be an active blood donor. Yet, for the first blood donation, direct 'influence from friends/relatives', 'media appeal' and other types of recruitment were more commonly reported as reasons or motives for donating blood than altruism [14].

In the current study, most of the participants prefer to donate to governmental hospitals (24%) followed by blood donation campaigns (4%). To guarantee a tolerable blood supply, blood collection organizations must layout campaigns to recruit and conserve an active donor source. Such campaigns commonly appeal to altruism and humanitarianism, which donors most frequently cite as their reasons for donating [15]. However, large donor registries and the widespread recruitment campaigns that sustain them did not become a necessity until the technology for the collection, storage, and transfusion of blood had advanced to a point that enabled the establishment of transfusion services that could provide large amounts of stored blood to meet high demands.

Although the majority of the study subjects were with relatively elevated education, it was apparent that awareness and tendency towards blood donation were more positive among more educated people. Thus, targeting educated people may restore some efforts in recruitment for blood donation. Educated people can utilize the awareness material more actively than less educated peers. Prior research has shown that education materials that directly address prospective donor concerns and provide specific coping suggestions are particularly effective at enhancing donation attitudes and intentions to give blood. Blood donation coping materials, presented in either written or audiovisual formats, significantly enhance willingness to donate blood among young adults regardless of their initial attitudes toward blood donation [16].

On the other hand, the findings of the present study suggest that people working in the education sectors are more acceptable for blood donation programs and can be involved in blood donation campaigns. Military also represent a major sector, which should be targeted in recruitment.

Nevertheless, some people have a strong shift towards the idea of paid donation (remunerated). In Saudi Arabia, the blood donor system depends on a combination of voluntary and involuntary donors [13]. Further future planning with an emphasis on educational/publicity programs and careful organization of donor recruitment campaigns could see the dream of total voluntary non-remunerated blood donations should not take long to be true. The global framework for action to achieve 100% voluntary blood donation has been developed jointly by the World Health Organization and the International Federation of Red Cross and Red Crescent Societies. It is designed to provide guidance and support to countries seeking to establish effective voluntary blood donor programs, phase out family/replacement blood donation and eliminate paid donation. The vision embodied in this framework is the achievement of 100% voluntary non-remunerated blood donation in every country of the world. It is based on the recognition that voluntary non-remunerated blood donors are the foundation of a safe, sustainable blood supply. Without a system based on voluntary unpaid blood donation, particularly regular voluntary donation, no country can provide sufficient blood for all patients who require transfusion [17].

CONCLUSION

Small numbers of people intend to give a voluntary blood donation, which might be due to the lack of awareness towards blood donation. The great majority of those experienced previous blood donations were due to unavoidable donation (for relative or friend). Religious, education, occupation factors should be considered in recruitment besides other known factors. The use of government hospitals as well as, blood donation campaigns can enhance the blood donation recruitment in Saudi Arabia.

DECLARATIONS

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

REFERENCES

[1] Al-Drees, Abdul Majeed. "Attitude, belief, and knowledge about blood donation and transfusion in the Saudi population." *Pakistan Journal of Medical Sciences,* Vol. 24, No. 1, 2008, p. 74.

[2] Alfouzan, Najd. "Knowledge, attitudes, and motivations towards blood donation among King Abdulaziz Medical City Population." *International Journal of Family Medicine,* 2014.

[3] Allain, Jean-Pierre, and Cees Th Smit Sibinga. "Family donors are critical and legitimate in developing countries." *Asian Journal of Transfusion Science,* Vol. 10, No. 1, 2016, p. 5.

[4] Snelling, Paul C. "Challenging the moral status of blood donation." *Health Care Analysis,* Vol. 22, No. 4, 2014, pp. 340-65.

[5] Politis, C. "Blood donation systems as an integral part of the health system." *Archives of Hellenic Medicine,* Vol. 17, No. 4, 2000, pp. 354-57.

[6] World Health Organization. "Safe blood starts with me: blood saves lives: stories and souvenirs from World Health Day 2000 together with useful information on blood safety." World Health Organization, 2001.

[7] Lownik, E., et al. "Knowledge, attitudes and practices surveys of blood donation in developing countries." *Vox Sanguinis,* Vol. 103, No. 1, 2012, pp. 64-74.

[8] Finck, Rachel, et al. "Motivating factors and potential deterrents to blood donation in high school aged blood donors." *Journal of Blood Transfusion,* 2016.

[9] Bednall, Timothy C., and Liliana L. Bove. "Donating blood: a meta-analytic review of self-reported motivators and deterrents." *Transfusion Medicine Reviews,* Vol. 25, No. 4, 2011, pp. 317-34.

[10] Sojka, B. Nilsson, and Peter Sojka. "The blood donation experience: self□reported motives and obstacles for donating blood." *Vox Sanguinis,* Vol. 94, No. 1, 2008, pp. 56-63.

[11] Yuan, Shan, et al. "Motivating factors and deterrents for blood donation among donors at a university campus-based collection center." *Transfusion,* Vol. 51, No. 11, 2011, pp. 2438-44.

[12] Abolfotouh, Mostafa A., et al. "Public awareness of blood donation in Central Saudi Arabia." *International Journal of General Medicine,* Vol. 7, 2014, p. 401.

[13] Gader, Abdel Galil M. Abdel, et al. "Attitude to blood donation in Saudi Arabia." *Asian Journal of Transfusion Science,* Vol. 5, No. 2, 2011, p. 121.

[14] Sojka, B. Nilsson, and Peter Sojka. "The blood donation experience: self□reported motives and obstacles for donating blood." *Vox Sanguinis,* Vol. 94, No. 1, 2008, pp. 56-63.

[15] Wang, Jean CY. "A Call to Arms: Wartime Blood Donor Recruitment." *Transfusion Medicine Reviews,* 2017.

[16] France, Christopher R., et al. "Enhancing blood donation intentions using multimedia donor education materials." *Transfusion,* Vol. 51, No. 8, 2011, pp. 1796-1801.

[17] World Health Organization. "WHO guidelines approved by the guidelines review committee." *Geneva: WHO,* 2009.