Original Article

Attitude to blood donation in Saudi Arabia

Abdel Galil M. Abdel Gader, Abdel Moniem A. Osman, Furgah H. Al Gahtani, Mohamed N. Farghali, Ali H. Ramadan, Abdel Kareem M. Al-Momen

The Blood Donor Centre, King Khalid University Hospital and The Blood Transfusion Research Group, King Saud University, Riyadh, Saudi Arabia

Abstract:

Background and Objectives: The blood donor system in the Kingdom of Saudi Arabia depends on a combination of voluntary and involuntary donors. The aim of this study is to explore the attitudes, beliefs and motivations of Saudis toward blood donation. **Materials and Methods:** The study was conducted at the Donor Centers at King Khalid University Hospital (KKUH) Blood Bank and King Saud University Students Health Center, Riyadh. A self-administered questionnaire was distributed to donors (n = 517) and nondonors (n = 316), between February and June 2008. All were males. **Results:** Ninety-nine percent of the respondents showed positive attitude toward blood donations and its importance for patients care, and object the importation of blood from abroad. *Blood donors:* Ninety-one percent agree that that blood donation is a religious obligation, 91% think no compensation should be given, 63% will accept a token gift, 34% do not object to donating six times/year and 67% did not mind coming themselves to the donor center to give blood. *Nondonors*: Forty-six percent were not asked to give blood and those who were asked mentioned fear (5%) and lack of time (16%) as their main deterrents. Reasons for rejection as donors include underweight and age (71%) and health reasons (19%). Seventy-five percent objected to money compensation but 69% will accept token gifts and 92% will donate if a relative/friend needs blood. **Conclusion:** These results reflect an encouraging strong positive attitude toward blood donation. Further future planning with emphasis on educational/publicity programs and careful organization of donor recruitment campaigns could see the *dream* of total voluntary nonremunerated blood donations should not take long to be true.

Key words:

Attitude to blood donation, donor compensation, donor motivation, Saudi blood donors

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Correspondence to:
Prof. A.M.A. Gader,
The Blood Bank, King Khalid University Hospital, King Saud University, PO Box-2925, Riyadh-11461, Saudi Arabia.
E-mail: amagader@hotmail.com

Introduction

The Blood Transfusion Service (BTS) in the Kingdom of Saudi Arabia is basically a hospital-based blood banking system where blood banks are responsible for the whole service, including the recruitment of donors, testing donated blood for infective agents, and the preparation, storage and issue of components (Packed RBCs, fresh frozen plasma, platelet concentrate, cryoprecipitate and filtered products). Over the last three decades the source of blood has shifted dramatically from imported blood to locally recruited blood donors. At the present time, the source of donated blood is a combination of involuntary donors (mainly relatives, friends and workmates of patients), and a growing number of voluntary nonremunerated donors. The latter source is expanding rapidly through donor drives arranged by various blood banks.

To match the ever increasing clinical needs for different blood derivatives, and to sustain self-sufficiency, continuous effort need to be done to make sure that the donor recruitment campaigns sustain donor input. In this respect, in the past three decades, studies continue to emerge from different countries, from developed[1-6] and developing,[7-13] probing the attitude and motivations of blood donors.

A recent article that reviewed studies the factors that would influence the recruitment and retention of blood donors, has identified a range of sociodemographic, organizational, physiological and psychological factors that influence people's willingness to donate blood.[14] As expected incentives offered to donors featured prominently and these varied from health-related incentives such as free medical testing[15] including cholesterol and prostate-specific antigen (PSA) screening, blood credit,[3] to economic incentives including tickets to events, lottery or raffle tickets,[3] but certainly not money.[9] Education, whether the level of school education or general health education of the public about blood donation had positive influence of the attitude of toward blood donation.[9,11] Also, blood donor convenience and satisfaction with respect to the donation time and location were found to be important factors that foster the altruistic behavior of blood donors.[16,17]

As expected, the findings of these studies cannot be taken for granted to apply to our populations, in view of the considerable cultural, social differences that exist both within and across countries, in addition to the wide variation in the standard of education, health services and above all the economy.

However, detailed information on the attitude

of blood donors is lacking in Middle Eastern countries, and particularly the oil-rich Gulf States, where the health service has undergone extensive and very rapid modernization with the inflow of the oil wealth. The medical services are now provided free and by state-of-the art hospitals which deliver highly specialized services, especially in areas, such as open heart surgery, hematology/oncology, transplant surgery, A and E as well as acute care medicine that require liberal quantities of blood components.

This study aims to probe the attitudes, beliefs and motivations of Saudis toward blood donation. Such information is basic for planning the attainment of total voluntary blood donations, in the way to fulfill the long-waited implementation of the World Assembly Resolution 28.72 of May 1975, that member nations should work to establish a national BTS based on nonremunerated donation of blood.

Materials and Methods

A self-administered questionnaire was prepared after a review of earlier reports that probed the altitudes toward blood donation in different countries.

The questionnaire was distributed at random to both donors and nondonors: Basically those attending the Donor Centers at King Khalid University Hospital (KKUH) Blood Bank and King Saud University Students Health Center, Riyadh, between February and June 2008. The questionnaire was also distributed at random to students at the Colleges of Medicine, Arts, Science, and Education as well as high schools. All the participants were males, in view of the fact at the present moment, more than 95% of the blood donors giving blood to KKUH Blood Bank are males. A similar study probing the attitude of females is under way. The questionnaire probes various aspects of the attitudes, beliefs and motivations toward blood donation. Respondents were requested to give an answer to most question by a 'Yes' or 'NO'. The total number of respondents was 833; 517 were previous blood donors and 316 have never donated blood and the response rate to the questionnaire was 100%. Their ages ranged from 15 to 40 years (mean ± SD = 22.8 ± 5.4).

Statistical analysis

The information obtained was entered into a computer data sheet (Microsoft Excel) and the responses to the questions were expressed, where applicable, as percent yes or no. The Fischer's exact test was used for comparison on selected survey items to work out the significance of the difference between the responses of donors and nondonors.

Results

Responses of blood donors

The positive attitude to blood donation was overwhelming as all of the interviewed donors agree that blood donation is important and that it helps the needy patient; and 97% will donate again if asked. As to importation of blood from abroad, which used to the case more than two decades ago, 91% objected this idea [Table 1]. To probe further the real motivation for blood donation, 91% believe that blood donation is a religious duty.

The blood donors in this study were predominantly voluntary (71%); nonvoluntary donations (29%) were for relatives, friends and workmates. As to the sensitive issue of compensation for their blood donation, the overwhelming majority of donors (85%) rejected the idea of giving money as compensation for their donation, but their opinion was divided as to whether a token gift (such as a pen, watch, Arabian head dress, 'ghutra') should be given; 63% approved the idea and 37% rejected it. When asked about their knowledge of the frequency of blood donation, 34% will donate six times/year, 22%: four times, 21%: three times, 14% twice and 4% once a year. Lastly, when probed about the location of blood donation, the majority (67%) would not mind coming to the blood donation center for donation, while a minority (33%) preferred the donor team to come to their place of work or residence.

Table 1: A summary of the responses of Saudi donors (*n* = 517) to a questionnaire probing their attitude to blood donation

Is blood donation important?	
Yes	100
No	0
What is your feeling about blood donations?	
Positive	97
Negative	3
Does blood donation help needy patients?	
Yes	100
No	0
Do you approve the importation of blood from abroad?	
Yes	9
No	91
Will you donate again if asked?	
Yes	97
No	3
Is blood donation religious duty?	
Yes	91
No	9
Reasons for previous donations:	
• Voluntary	71
• Relatives, friends and work mates	29
Do you agree that money should be paid to donors?	
Yes	15
No	85
Do you agree that a token gift should be given to donors?	
Yes	63
No	37
How many donations a blood donor should give?	
6 times	34
5 times	4
4 times	22
3 times	22
2 times	14
1 times	4
Does it suit you to donate at the Blood Bank or at your workplace/resident?	
Blood Bank	67
Workplace/resident	33

All numeric values indicates in percentage

Responses of nondonors [Table 2]

The overwhelming majority (99%) of nondonors confirms their knowledge of the importance of blood donation; 92% disapprove the importation of blood, and 46% were never approached to donate blood. Among those who were asked to donate but did not, their reasons for not donating include: Fear (5%) and disqualified due to health reasons (16%), shortage of time (16%), donation is a risk to health (25%) and 38% no specific reasons. Seventy-

Table 2: A summary of the responses of Saudi nondonors (*n* = 316) to a questionnaire probing their attitude to blood donation

Is blood donation important?	
Yes	99
No	1
Do you approve the importation of blood from abroad?	
Yes	8
No	92
Have you been asked to donate before?	
Yes	54
No	46
Why have you declined to donate when asked (*n* = 172)?	
Fear	5
Health reason	16
No time	16
Fear for my health	25
No specific reason	38
Have you been rejected as blood donor (*n* = 97)?	
Yes	31
No	69
When rejected (*n* = 97), state reasons:	
• Not qualified due to age, weight	71
• Low haemoglobin and health reasons	19
• Fear	10
Should blood donors receive compensation?	
Yes	19
No	81
Do you agree that money should be paid to blood donors?	
Yes	25
No	75
Do you agree a token gift should be given?	
Yes	69
No	31
Will you donate if token/gift is given to you?	
Yes	30
No	70
If a relative, friend or workmate needs blood will you donate?	
Yes	92
No	8

All numeric values indicates in percentage

nine of the nondonors (31% out of 316) went to donate but were disqualified due to age and low weight (71%), low hemoglobin and other health reasons (19%) and fear (10%). 92% of nondonors showed a strongly positive attitude to donation as they will donate blood if a relative, friend or workmate needs blood. As for incentive or compensation, the great majority (81%) do not approve that any compensation should be paid for blood donation [Table 2], 75% do not approve money compensation, but 69% do not mind receiving a token gift.

Comparison of the responses of donors vs. nondonors: (Control group)

It is noteworthy that both donors (61%) and nondonors (67%) were predominantly young >25 yrs, and where of comparable educational levels [Table 3]. The overwhelming majority (<90%) of both groups agree on the importance of blood donation and disapprove the importation of blood from abroad. However, significantly higher proportion of nondonors (25%) approved the idea of money compensation, and agreed on their acceptability of a token gift [Table 4].

Table 3: Age and education of blood donors and nondonors

Characteristic	Donors *n* = 517 (%)	Nondonors *n* = 316 (%)	*P* value
Age (yrs)			0.007
15-20	129 (25)	111 (35)	
21-25	186 (36)	101 (32)	
>25	202 (39)	104 (33)	
Education			0.524
Medical and science	114 (22)	63 (20)	
Art and education	134 (26)	88 (28)	
High school	171 (33)	95 (30)	
Below school	98 (19)	70 (22)	

Table 4: Attitude of blood donors versus nondonors, toward blood donation

Attitude	Donors *n* = 517(%)	Control *n* = 316(%)	*P* value*
Is blood donation important?			
Yes	517 (100)	313 (99)	0.05
No		3 (1)	
Do you approve the importation of blood from abroad?			
Yes	47 (9)	25 (8)	
No	47 (91)	291 (92)	0.557
Do you agree that money should be paid to donors?			
Yes	78 (15)	79 (25)	0.0004
No	439 (85)	237 (75)	
Do you agree that a token gift should be given to donors			
Yes	326 (63)	98 (69)	
No	191 (37)	218 (31)	0.0844

*Fisher exact test

Discussion

Social behaviors have frequently being explained by two theories: "The theory of reasoned action"[17] and its extension "The theory of planned behavior".[18] The former proposes that most behaviors are under volitional control and are determined by the attitude toward the action, while the latter proposes that individuals who do not have complete control over their behavior or that their behavior is not totally their decision, could be influenced by others. These two theories have repeatedly been tested and confirmed in blood donation and have fostered the understanding why some individuals donate and continue to donate blood, while others do not. Indeed, the consistent information that emerged from many studies on beliefs, attitudes and motivations that influence the behavior of blood donors is that donors have highly positive attitudes and beliefs toward blood donation. The significance and application of such information is vital not only for those running blood donation centers, but also for those who have donated blood before, to get them to continue donating blood regularly, and hopefully keep this as a habit. The information is equally important for nondonors in the hope that their beliefs and attitudes could be influenced and modified and in this way they could be motivated and moved to start donating blood.

There is no doubt that the problems surrounding donor recruitment differ in different countries and in rural or urban areas within the same country, and are determined by cultural, social, educational and other factors. Thus, in developed countries

where the donors are voluntary nonremunerated, a decline in blood supply[4,19,20] is a main concern, while in most developing countries, where shortage of blood is still a serious problem,[21-23] the blood donation is still predominantly involuntary in which relatives, friends and workmates of patients give a significant contribution, leaving a small proportion to voluntary nonremunerated donors. In both situations there is need to analyze donor behavior and attitude to make sure that the blood supply is sustained by recruiting new donors and retaining those who have donated especially voluntary donors.

In Saudi Arabia, blood supply has shifted dramatically from imported blood, to paid donors and, lately, to the current total dependence on the indigenous population, primarily (71%) voluntary donors, with a small percentage (29%) nonvoluntary. The potential for total reliance on voluntary nonremunerated donors is enormous and very promising, as was exposed in a recent report.[19] At this stage in the development of the transfusion service, the current study tests the very basic nature of the attitude of Saudis to blood donation, in the hope of illuminating the way forward toward establishing a national BTS based on voluntary nonremunerated donors.

There is no doubt of the current overwhelming positive attitude to blood donation, among Saudi donors and nondonors, within the young age group of 20-30 yrs. It is also reassuring to note that almost all the participants in this study object to importation of blood from abroad, reflecting their desire to make blood available locally. The responses to various questions offer important clues to the prevailing attitude of both donors and nondonors toward blood donation.

Religion is deeply rooted in the Saudi society and there is little doubt that it is a major motivating factor for the local population to donate blood, as 91% of the donors in the current study believe that blood donation is a religious duty. This very high response rate may, in part, be based on the religious ruling ["fatwa"] from the most respected religious cleric, the late Sheikh Abdul Aziz bin Baz, who advised that it is the duty of a Muslim to donate blood to save the life of a needy patient; pamphlets carrying his "fatwa" are placed in most donor centers in Saudi Arabia.

In contrast, a Nigerian study[24] 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 Jahovah's witnesses.[25,26] Thus the religious factor could have either a positive or negative motivating effect on blood donation. An active role of religion in improving the safety of donated blood has recently been shown as blood donations collected at places of worship has greater chance of attracting donors free from transmitting HIV infection.[2]

Other than the religious factor, the effectiveness of various incentives offered in return for blood donation have been highlighted in different studies and these include: Health-related incentives, such as blood credit, cholesterol and PSA screening for donors older 25 years, ticket to events, lottery and or raffle tickets for younger donors (<25 yrs),[3] health-related or economic incentives were also confirmed in other studies.[9,27] Our donors are predominantly of young age groups (<30 yrs), and the positive motivational response from both donors and nondonors to token gifts was remarkable. Other than incentives, affective measures have frequently been shown to encourage blood donation; such measures include inducing a "sense of give" among the public, when presented with hypothetical emotionally charged situations dramatizing the need for donor blood,[2] "sense of solidarity or duty" and the possible personal or family benefits that donation might bring,[28,29] feeling of satisfaction, being more alert and feeling generally better, after blood donation,[6] as well as a sense of sharing and willing to accept the export blood to benefit other local communities in need.[30] A recent report from Nigeria[11] found that 41% of donors prefer certificates as incentives for donation. In the present study a high proportion of both donors and nondonors share the sense of duty toward blood donation as 92% of nondonors and 97% of donors would donate if called upon to help a needy patient.

Money compensation has remained out of favor in many studies. In an attempt to improve voluntary donations, a Nigerian study which probed the attitude of University students to blood donation,[24] found that 80% of the respondents were prepared to donate freely. Similarly, in a study among Dhaka University students,[8] 93% of the respondents objected to money incentives. Our data on money as compensation were much in line, as 85% donors and 75% of nondonors objected money compensation. A study from USA found financial motivation of donors to be most pronounced among Hispanics.[31] On the other hand a recent study from Leeds[32] found that the majority (67.7%) of potential recipients of blood do not object to donors been paid. Also, the prospect of remuneration made 16.4% of the respondents more likely to donate. It is possible that with the decline in the number of voluntary donors in developed countries, money compensation may be resorted to. However, the serious potential disadvantage of payment is not only the attraction of risky donors, specially drug users, but that money rewards makes the interest of donors tied with their need for money rather than regular donations toward the establishment of regular nonremunerated donations.

A recent international forum[33] discussing paid versus unpaid donors, found that that the concept of what constitutes unpaid donors differs from one country to country from no payment, which is mostly prohibited by law (UK, the Netherlands, Australia, Brazil, Italy, Japan, New Zealand, Norway, Denmark, Austria, Switzerland) to payment as in USA and Germany. Compensation for lost time and travel expenses is given in some countries (Austria, Norway, Switzerland, UK and Japan) and token gifts such as movie tickets, in others (Australia).

Can blood supply be sustained and constantly dependant on incentives? It is a fact that repeat donors are the mainstay of blood banks in developed countries[34,35] and their psychological commitment to blood donation is so strong that they do not expect recognition or gifts for their efforts, nor are they pressurized by friends or families to donate blood. These are the type of donor population that recruitment efforts should labor to build, keep and expand. This is a major lesson developing countries need to learn.

There is no doubt that education plays a major role in influencing the attitude toward blood donation; education encompassing both the level of education of the donors and also health educating the public about blood donation. Studies in Tanzania,[9] Nigeria[11] and Thailand[18] found that voluntary donations were correlated with secondary school education.

In a report from USA[36] an education videotape on blood donation, shown to high school children, proved to be useful motivational tool for the recruitment of high school blood donors, as it has resulted in an increase in donation by 18.7% and students showed more positive attitude toward donation and developed greater intention to donate. Such effort proved its worth as one study, among residents of Athens aged 18-65 years,[2] found most donors read and understood the educational material offered to them at donor sessions; 40.8% of these donors were students, military recruits, professionals and scientists. In our study, 50% of the participants were university and higher school students and the rest were predominantly urban population. Also, we did not note any difference between the responses of medical and or science students, on one hand, and arts/social science students on the other. This indicates that blood donation is predominantly a social behavior which, although influenced by education in general, medical and/or scientific knowledge or education does not have a positive motivating effect toward blood donation. This is in line with a study in India,[12] which found medically oriented population (medical and nursing students); both donors and nondonors do not differ in their attitude toward blood donation leaving other social variables to account for donor behavior. The benefit of donor education has also been highlighted in a Spanish study which found less favorable attitude of nondonors to blood donation could be changed with the appropriate educational campaigns.[28]

Fear, risk to health and physical harm from blood donation has featured frequently in many studies.[1,9-11,13,28,29] In the present study a small minority (5%) of nondonors stated fear as their reason for not donating blood. In Mombatho, donation was found to be a health risk and there was also uncertainty whether donating blood is safe.[10] In a recent telephone survey of household in USA,[1] "fear from hospitals" was one of the three major factors which were negatively associated with prior history of blood donation. Similarly in Tanzania fear that blood donation would infect with HIV and/or damage to health was a frequent worry expressed by both donors and nondonors.[9] In contrast, fear from developing AIDS was not a major issue to account for the declining number of donors in one Scottish study.[5] This is a good example of identifying a negative factor and then addressing it effectively in future donor recruitment campaigns. Such campaigns should also focus on clearing such wrong concepts about blood donation, which are usually more prevalent in rural areas[9,18] where the level of education is low.

Lastly, after preparing the public to come and donate blood, remains the problems of access to donation sites. In the current study the overwhelming majority of donors do not seem to care whether they go to the Blood Donor Center or the donor team would come to their place of work or residences. A Spanish study found problems of access and comfort the most demotivating factor to 74.6% of the donors.[24] It should, therefore, be the duty of donor organizers to make sure that any source of discomfort to prospective donors is well attended to.

In conclusion, the information accumulated from the current study highlighted the need for appropriate motivational campaigns to exploit the "favorable attitude" of nondonors toward blood donation. It is also a source of optimism that most of the donors could readily be converted into regular/repeat donors, as most agree that donation can be given more than once every year. There is also need for building the loyalty of voluntary blood donors, through well-planned donor education programs aimed at dispelling any myths, fears and wrong concepts about dangers of donating blood. This should be coupled with special personal care directed toward blood donors, by listening to their complaints, worries and suggestions and attending to them. Special attention should also be directed to reducing any inconvenience posed by the donation process, its location or timing. The educational programs should take into account social and other variables (including donor educational level) that determine donor attitude and behavior and directed to motivate nondonors to come forward and undertake the first and usually most stressful donation and to continue donating regularly thereafter. Recruitment efforts and strategies should also include well planned but limited and effective incentives. The current token gifts seem to be acceptable and desirable to both donors and non donors. These incentives coupled by the medals awarded to 10, 25, 50 donations should be kept and widely advertised and celebrated in news media. These motivational/education campaigns should be launched among young sections of the population (mainly schools), not only to recruit new donors but to "CONVERT" those with favorable attitude into a regular practice thereby fostering the building of voluntary donor pool and ultimately establishing the long-awaited total voluntary nonremunerated donor system.

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