

Original Research Article

Factors leading to reluctance of blood donors from blood donation in Derna/Libya

Raga A. Elzahaf^{1,2*}, Khalid A. Khalil³, Hawwa Alshareff¹, Amnah Bufajra¹

¹Department of Public Health, College of Medical Technology, Derna, Libya

²MENA Research Group

³Faculty of Medical Technology, Misurata

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*Correspondence:

Dr. Raga A. Elzahaf,

E-mail: rajaaelzahaf@gmail.com

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ABSTRACT

Background: Blood donation is a major concern to the society as donated blood is lifesaving for individuals who need it. In Libya, the concept of voluntary blood donors is almost non-existent due to the absence of blood donor motivation and retention strategies. The objective of this study was to assess the factors leading to reluctance of blood donors from blood donation among general population in Derna.

Methods: Descriptive cross-sectional survey design was used to collect data of barriers towards blood donation in Derna/Libya between August 2021 and September 2021. 425 Libyan living in the city of Derna were selected by convenience sampling design. Self-administered structured questionnaire was used which was adopted from previous studies. Data analysis was performed in statistical package for the social sciences (SPSS) version 25.

Results: Of the 425 participants, the majority of them were male (70.1%). 195 (45.9%) reported that they had donated blood at least once in their lifetime, 186 (95.4%) were male and 9 (4.6%) were female. People who never donated blood most commonly (54.1%) reported that they never donated because they did not feel comfortable in hospital, followed by blood donation causes weakness and fainting or dizzy and they have never been asked to donate.

Conclusions: Blood donation practice in this study was found to be low. Ministry of health and Red Cross association have to work in strengthen manner to improve the practice of blood donation to plan strategy of awareness about blood donation should be encouraged among general population.

Keywords: Reluctance, Blood donors, Barriers, Blood donation

INTRODUCTION

Blood transfusion is an essential component of the healthcare system of every country and patients who require blood transfusion service as part of the clinical management of their condition have the right to expect that sufficient and safe blood will be available to meet their needs. However, this is not always the case, especially in developing countries. In many developing countries, there is a widespread shortfall between blood requirements and blood supplies and as a result, many patients die or suffer unnecessarily because they do not have access to blood and blood products.¹

Every second for every day, people around the world of all ages need blood transfusions to survive. Millions of blood units were collected from donors every year but demands are increasing day by day that is pushing for sufficient and timely provision of blood.²

In principle, there are three types of blood donors. These are; replacement, paid, and voluntary donors.³ However, most of blood donation is the voluntary withdrawal of blood from an individual, after undergoing some medical screening in order to ensure the safety of both the donor and the recipient. Blood donation is crucial and indispensable in the medical process of saving lives.

The World Health Organization (WHO) is recommending all countries should obtain their blood supplies from voluntary donors by the year 2020. But the majority of blood donation practices are replacement type of donation.⁴

The psychology and motivation of blood donors in developed countries is well understood; this knowledge established safe blood supply based on voluntary, non-remunerated donors in many countries across the world.⁵ Identifying motivational factors affecting blood donation and recruitment of safe and low-risk donors is a challenge in the developing world, which calls governmental commitment and required the need to improve research evidence in this area of practice.⁶

The most common misconceptions about blood donation were the risk of infection; selling donated blood to patients, and that blood donation believed to cause physical weakness. Therefore, regular blood donations are important to maintain blood supply and since it may not be stored for a long time.⁷

In developing countries, the habit of blood donation was much lower than that of high-income countries.⁸ In sub-Saharan Africa, blood helps to reduce morbidity and mortality of young children and pregnant women in particular. However, many deaths could be prevented if national blood services and hospitals have adequate supplies of blood. From 2011 to 2014, the overall blood collections were increased by 19% among 14 African countries.⁹

However, Libya is facing a shortage of blood products (blood bags), due to the limited number of voluntary donors and a lack of fluidity in the blood transfusion system organization.

Furthermore, in Libya, blood donations are usually made by replacement donors, i.e. by relatives and friends of the patient needing blood. A minimum of four months between donations is required. Donors should be 18–60 years, and they should be generally healthy according to a clinical examination that includes blood pressure measurement.

Aim

The aim of present study was to assess the factors leading to reluctance of blood donors from blood donation in Derna/Libya.

METHODS

Descriptive cross-sectional survey design was used to collect data of barriers towards blood donation in Derna/Libya between August 2021 and September 2021.

Data about blood donation were obtained from 425 Libyan living in the city of Derna. Participants were selected by convenience sampling design. Self-administered

structured questionnaire was used which was adopted from previous studies.¹⁰⁻¹²

A purposeful questionnaire was designed and used for obtaining of the necessary data. The following information was obtained from each participant: age, sex, and education level, family income, blood group, occupation sector and history of donation.

Data analysis

Statistical package for social sciences (SPSS) (version 26) was used. Descriptive statistics was used to determine mean and standard deviation for continuous variables like age while frequency and percentage for qualitative variables (gender and education level). Chi-square test performed for statistical significance (P value). P value less than 0.05 was considered statistically significant.

RESULTS

A total of 425 participants were included in the study from Derna city. Among the respondents, 195 (45.9%) had donated blood at least once in their lifetime and 230 (54.1%) were non-blood donors (Figure 1). The majority of the respondents were male (70.1%), and only 29.9% were female.

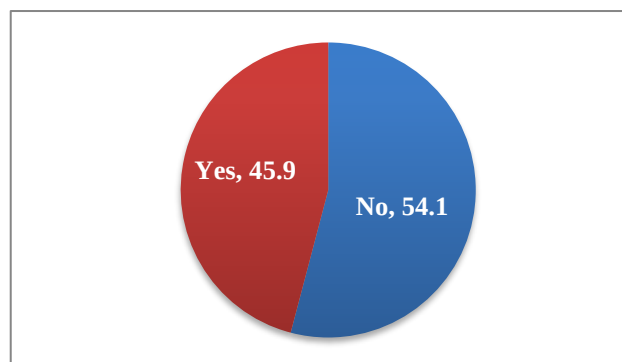


Figure 1: History of blood donation.

Most of our study participants, 143 (33.6%) were in the age less than 25 years followed by 124 (29.2%) in 25-35 years range. The mean age of participants was 34.04 years (standard deviation, SD=12.5 years). Regarding to their occupation; 112 (26.6%) were students and 54 (12.7%) were employee. More than half of them 284 (66.8%) come from medium socioeconomic status, 74.1% had university degree (Table 1).

As mention above, 195 (45.9%) had donated blood at least once in their lifetime, 186 (95.4%) were male and 9 (4.6%) were female. Most of participant had donated blood in young age, in high monthly income and in have higher education level.

There were statistically significant between the demographic factor and blood donation ($p > 0.05$) (Table 2).

However, 135 (38.8%) have blood group O and 113 (26.6%) have blood group A (Figure 2).

Table 1: Socio-demographic characteristics of the study participants.

Variables	Frequency	%
Age (years)		
≤25	143	33.6
26-35	124	29.2
36-45	76	17.9
46-55	55	12.9
51≤	27	6.4
Gender		
Male	298	70.1
Female	127	29.9
Level of education		
Preparatory	3	0.70
Secondary	87	20.5
Universal	315	74.1
Postgraduate	20	4.7
Monthly income (LD)		
Low Less than 1200	34	8.0
Middle 1210-2400	107	25.2
High than 2400	284	66.8
Occupations		
Business	48	11.3
Doctor	20	4.7
Employee	54	12.7
Engineer	20	4.7
Housewife	2	0.5
Nurse	11	2.6
Officer	42	9.9
Retired	9	2.1
Student	112	26.4
Teacher	62	14.6
Technician	26	6.1
University professor	6	1.4
Not working	13	3.1

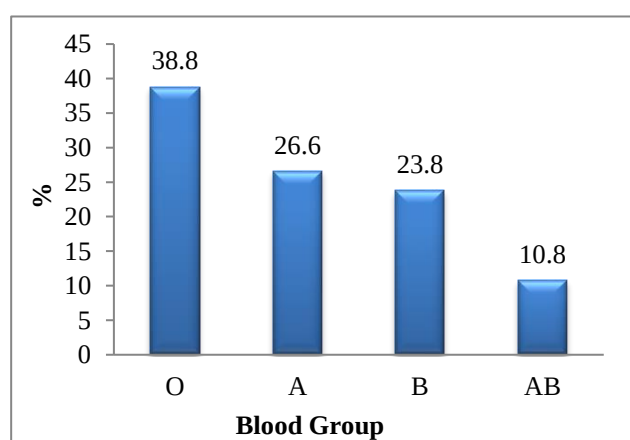


Figure 2: Blood of group of participants.

Table 2: Factors associated with practice of blood donation among general population in Derna.

Variables	History of blood donation		X ²	P
	Yes	No		
Age (years)				
≤25	44	99	23.91	0.001
26-35	65	59		
36-45	46	30		
46-55	24	31		
51≤	16	11		
Gender				
Male	186	112	109.78	0.001
Female	9	118		
Level of education				
Preparatory	15	5	14.81	0.002
Secondary	1	2		
Universal	50	37		
Postgraduate	129	186		
Monthly income (LD)				
Low less than 1200	18	16	7.52	0.023
Middle 1210-2400	37	70		
High than 2400	140	144		

Reasons for not donating blood

The main reasons given by the participants for not donating blood was found to be half of participants does not feel comfortable in hospital 200 (47.1%). Following by blood donation causes weakness and fainting or dizzy 175 (41.2%) and they have never been asked to donate 173 (40.7%).

Additional barriers include: side effects of receiving blood or blood components, having health problems, fear of needles, fear of blood, medical errors, time consuming, lack of required conditions to donate, fear of having blood borne infections such as HIV, and were not allowed to donate blood by parents and friends.

Results show that don't like to help other (4.7%, n=20) not receiving blood when need it (10.4%, n=44) and previous bad donation experience were the lower barrier affecting blood donation among Libyan population (Table 3).

When was considered gender, it was seen that 31.5% (n=63) of the female and 68.5% (n=137) of the male replied that does not feel comfortable in hospital, and there is no significant different between male and female (0.472, p=0.525).

Besides, 37.1% (n=65) of the female and 62.9% (n=110) of the male reported blood donation causes weakness and

fainting or dizzy. And there is significant different between male and female (7.485, $p=0.007$).

On the other hand, 50.5% ($n=49$) of the female and 49.5% ($n=48$) of the male said that they fear of needle. And there is significant different between male and female (23.049, $p=0.001$) (Table 4).

People who never donated blood were most commonly due to that they were never asked to donate (126 while the second most common cause was not feel comfortable in the hospital (116), never thought about donating and perceived self-deferral due to health problems (80).

Seventy-four of donors cited that donation hours were inconvenient and unable due to time constraints.

Seventeen percent of people (42) thought they had a blood group, which was very common and hence not important for them to donate.

Thirteen percent (67) of the people were afraid of the donation procedure/needles, whereas 59.4% of the people were afraid that they may get some disease/illness like HIV by donating (90). Other uncommon reasons given were objection from the family members 60 (68.2%) and 101 (80.2%) never thought about donating. Only 13 participants said do not like to help other (Table 5).

Table 3: Reasons for not donating blood.

Parameters	Frequency	%
Blood donation is time consuming	117	27.5
Blood donation causes weakness and fainting or dizzy	175	41.2
Blood donation is harmful to the donor	60	14.1
Blood donation transit infection like HIV	152	35.8
Fear of needles	97	22.8
Does not feel comfortable in hospital	200	47.1
Cannot donate due to medical reasons	122	28.7
Don't receive blood when needed	44	10.4
Level of privacy during screening low	99	23.3
Doesn't have time	137	32.2
Doesn't know where to go	133	31.3
I have never been asked to	173	40.7
I might get a disease	151	35.5
I have blood group which is very common	59	13.9
Fear from blood	74	17.4
Parents/friends told not to donate blood	88	20.7
Lack of required condition to donate	102	24.0
Blood donation causes anemia	83	19.5
Don't like to help other	20	4.7
Never thought about donating blood	126	29.6
Previous bad donation experience	39	9.2

Table 4: Distribution of the study participants by gender and awareness associated factors leading to reluctance to donate.

Parameters	Female, N (%)	Male, N (%)	X ²	P
Blood donation is time consuming	46 (26.3)	71 (73.7)	6.658 ^a	0.012
Blood donation causes weakness and fainting or dizzy	65 (37.1)	110 (62.9)	7.485 ^a	0.007
Blood donation is harmful to the donor	30 (50)	30 (50)	13.495 ^a	0.001
Blood donation transit infection like HIV	51 (33.6)	101 (66.4)	1.521 ^a	0.226
Fear of needles	48 (49.5)	49 (50.5)	23.049 ^a	0.001
Does not feel comfortable in hospital	63 (31.5)	137 (68.5)	0.472 ^a	0.525
Cannot donate due to medical reasons	41 (33.6)	81 (66.4)	1.133 ^a	0.172
Don't receive blood when needed	6 (13.6)	38 (86.4)	6.183 ^a	0.014
Level of privacy during screening low	21 (21.2)	78 (78.8)	4.630 ^a	0.033
Doesn't have time	43 (31.4)	94 (68.6)	0.218 ^a	0.651
Doesn't know where to go	48 (36.1)	85 (63.9)	3.560 ^a	0.068
I have never been asked to	54 (31.2)	119 (68.8)	0.247 ^a	0.666

Continued.

Parameters	Female, N (%)	Male, N (%)	X ²	P
I might get a disease	91 (33.2)	183 (66.8)	4.080 ^a	0.047
I have blood group which is very common	28 (47.5)	31 (52.5)	10.100 ^a	0.002
Fear from blood	34 (45.9)	40 (54.1)	11.035 ^a	0.001
Parents/friends told not to donate blood	33 (37.5)	55 (62.5)	3.074 ^a	0.089
Lack of required condition to donate	30 (29.4)	72 (70.6)	0.014 ^a	1.001
Blood donation causes anemia	29 (34.9)	54 (65.1)	1.259 ^a	0.286
Don't like to help other	7 (35.0)	13 (65.0)	0.262 ^a	0.621
Never thought about donating blood	58 (46.0)	68 (54.0)	22.292 ^a	0.000
Previous bad donation experience	6 (15.4)	33 (84.6)	4.307 ^a	0.043

^aFisher's exact test

Table 5: Distribution of the study participants by history of donation and awareness associated factors leading to reluctance to donate.

Parameters	History of donation		X ²	P
	Yes, N (%)	No, N (%)		
Blood donation is time consuming	45 (38.5)	72 (61.5)	3.580 ^a	0.640
Blood donation causes weakness and fainting or dizzy	71 (40.6)	104 (59.4)	3.379 ^a	0.750
Blood donation is harmful to the donor	17 (28.3)	43 (71.7)	8.665 ^a	0.030
Blood donation transit infection like HIV	62 (40.8)	90 (59.2)	2.472 ^a	1.280
Fear of needles	30 (69.1)	67 (30.9)	11.320 ^a	0.010
Does not feel comfortable in hospital	84 (42.0)	116 (58.0)	2.293 ^a	1.440
Cannot donate due to medical reasons	42 (34.4)	80 (65.6)	9.045 ^a	0.030
Don't receive blood when needed	24 (54.5)	20 (45.5)	1.483 ^a	2.640
Level of privacy during screening low	55 (55.6)	44 (44.4)	4.864 ^a	0.290
Doesn't have time	47 (34.3)	90 (65.7)	10.910 ^a	0.010
Doesn't know where to go	41 (30.8)	92 (69.2)	17.671 ^a	0.010
I have never been asked to	47 (27.2)	126 (72.8)	41.154 ^a	0.001
I might get a disease	65 (43.0)	86 (57.0)	0.759 ^a	4.160
I have blood group which is very common	17 (28.8)	42 (71.2)	8.039 ^a	0.050
Fear from blood	18 (24.3)	56 (75.7)	16.771 ^a	0.010
Parents/friends told not to donate blood	28 (31.8)	60 (68.2)	8.841 ^a	0.040
Lack of required condition to donate	42 (41.2)	60 (58.8)	1.197 ^a	3.060
Blood donation causes anemia	30 (36.1)	53 (63.9)	3.939 ^a	0.500
Don't like to help other	7 (35.0)	13 (65.0)	1.001 ^a	0.364
Never thought about donating blood	25 (19.8)	101 (80.2)	48.913 ^a	0.001
Previous bad donation experience	23 (59.0)	16 (41.0)	2.964 ^a	0.940

^aFisher's exact test

DISCUSSION

Blood transfusion is a basic and vital tool in emergency lifesaving interventions. Globally, the need for blood and blood products has been increasing and evidence showed that the habit of donating blood in the population was not satisfactory.

In this study showed more than half of participants 230 (54.1%) never donated blood and 195 (45.9%) of the participants had been donated blood at least once in their lifetime.

This finding is somewhat similar with the findings of a cross-sectional study conducted among Yazd community

in Iran where 38% of the respondents had ever donated blood.³⁹ However, the result of this study is relatively high as compared to the findings of the studies done in Trinidad and Tobago, Dhaka in Bangladesh, India, and Nigeria.^{22,40-42}

Nevertheless, the finding of this study was relatively low as compared to the findings of a study in Saudi Army force hospital where 58.2% of the study participants have ever donated blood.⁴³

We found that age is significantly associated with blood donation status, where a higher percentage of participants less than 55 years were blood donors, compared to older. This finding was comparable with a previously reported similar finding.¹⁸

With regard to the gender, the positive practise toward blood donation was apparently more common among males compared to females. Our results revealed gender to have a significant association with the participant's blood donation status. In line with previous studies, many countries (United States, Saudi Arabia and India) have also reported a higher percentage of male donors than females.⁴⁴⁻⁴⁶ However, contradictory findings regarding the association between gender and blood donation status have been reported in China.⁴⁷ A systematic review regarding gender variation in giving blood found that although women are more altruistic than men, they donate blood less frequently due to low levels of hemoglobin, menstrual cycle, weight requirements and adverse reactions such as dizziness.⁴⁸ The contradicting findings reported in China might be because they allow woman during their menstrual cycle to donate blood as long as they have a normal hemoglobin level.

The main finding of this study is that better educational background and exposure to past donors were aim to donate blood. Both younger age group and better educational status were factors that were significantly associated with the intention to donate blood in the bivariate analysis. In contrast, other studies reported that reported in.^{18,48,50}

In Derna, blood donation is voluntary donors (mainly relatives, friends and workmates of patients), and a growing number of voluntary non-remunerated donors. However, this study was conducted in order to obtain information and inputs from participants, which will be useful in implementing relevant donor recruitment strategies because this population can contribute to health promoting activities in the society.

So, in this study, we aimed to identify factors that contribute to the willingness to donate blood among general population in Derna.

The most common barriers reported by non-blood donors are half of participants does not feel comfortable in hospital, following by blood donation causes weakness and fainting or dizzy and they have never been asked to donate.

This finding was comparable with a previously reported, not having a convenient place to donate was most commonly cited, as an important or very important reason for not donates.⁵¹

Additional barriers include: side effects of receiving blood or blood components, having health problems, fear of needles, fear of blood, medical errors, time consuming, lack of required conditions to donate, fear of having blood borne infections such as HIV, and were not allowed to donate blood by parents and friends.

Few participants reported that they don't like to help other, not receiving blood when need it, and previous bad donation experience were the lower barrier

Most studies showed the common reasons for not donating were inaccessibility of blood donation centers, fear related to donation process, medical unfitness, parental or friend opposition, lack of information related to the service, lack of opportunity and time.⁵¹⁻⁵⁴

Both barriers were significantly associated with gender; however, failing to meet the requirements has been reported more frequently by females, while "no one asked me to give blood" was more frequently reported by males, which has also been reported by other studies.⁵⁵

The findings in our study may be due to poor awareness about the blood donation requirements in Libya. It is important to highlight that no published studies have been found about the awareness of blood donation in Libya, and most of the non-donors reported that they does not feel comfortable in hospital to donate blood and this true as no blood bank centers in some city.

CONCLUSION

Blood donation practice in this study was found to be low as compared to other studies. Ministry of health and Red Cross association have to work in strengthen manner to improve the practice of blood donation to plan strategy of awareness about blood donation should be encouraged among general population. These findings underscore the need for blood donation education campaigns in communities, on the radio, and television to educate the public about blood donation. Our finding may be attributed to the fixed location of the clinic, its nearness to the town center, and the availability of reliable transport to the facility, as these factors are thought to ease inconvenience.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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