

# Knowledge, Attitudes and Practices Regarding Blood Donation Among a Sample of Volunteers in the Holy Karbala City / Iraq

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## Abstract

Across-sectional study carried out in the Blood Transfusion Center at the holy Karbala city/ Iraq. the aim of this study was to assess the level of knowledge, attitudes and practices regarding the bases and process of blood donation, during four months started from the 2<sup>nd</sup> of January to end of April 2017, A total of 446 individuals were interviewed, were donors 'attendants to the Blood Transfusion Center ". Ignorance, fear and misconceptions about blood donations and lack of voluntary blood donation organizations are major constraints in many developing countries to facilitate voluntary blood donation. More awareness must be create among all strata of population especially among youngsters on importance of blood donation.Regarding respondent knowledge about age limit and weight for donation, the study demonstrated 62.3 % of volunteers replied that a person between 18-65 years old could donate blood; only 54.0 % of them knew the minimum weight for donation. In respect to the reasons of donation, most of donors 77.9 % were donated blood as a religious and humanity duty, replacement 13.6%,were donated blood for family members or friends (replacement donors), while 8.5 % believed that blood donation is good for their health. The total score of knowledge found good and acceptable among 83% of sample. While unclear for 17 % of donors, blood campaigns was the main source of information in current43 study.Regarding the attitudes of people toward blood donation, 87.9 % of the respondents showed positive attitude toward blood donation and its importance for patients care. 85.9% of donors agreed that blood in the bank is safe. Positive attitudes towards blood donation observed among 82 % of respondents while it was low percent 18 % showed poor attitudes. Regarding the total score of the practice; most of the donors 80 % had good scores.only 20 % of donors, had poor scores;The current study revealed that there is very good and acceptable knowledge of people regarding blood donation among donors, the act of donating blood was associated with a religious and humanity duty rather than replacement with voluntary donation while no asked him to donate and the donation place is far & busy were the main reasons for reluctance to donate blood. In addition, majority of respondents had good attitudes & believes that blood donation is useful, but due to insufficient information, they are less willing to take part in blood donation .Based on this study, an effective strategy should made concerning motivation to blood donors in future. This needs education through dissemination of information on blood donation particularly on electronic media and mass media.

**Keywords:** knowledge, attitudes, practices, Blood donation, Voluntary, holy Karbala city.

## Introduction

"Whose ever saves a human life saves the life of the whole mankind," Allah Taala says In the Quran Al Mighty, [1]. There are eight key life-saving interventions in health-care facilities, blood transfusion recognized as one of them [2]. Because Demand of blood is rising day by day, while current blood donation is insufficient to meet the demand, therefore Blood services are facing shortage of blood all over the world[3].blood donation is a duty of every healthy member of the community & harmless will be taken from a donor, 20 minutes time not more than including time for refreshment and rest. Just half liter of blood donated can help save as many as lives of three people [4, 5]. Blood transfusion is the process of receiving blood or blood products & used in a variety of medical conditions to replace lost components of the blood [2]. Because there are no substitutes for blood, It is an essential element of human life, Blood donation is the beginning step for blood transfusion that can save the lives of millions of people worldwide, especially after an accident or during a medical operation [6, 7].

There are several types of blood donation: whole blood, red cells, plasma and platelets. To be eligible to donate whole blood, plasma or platelets, person must be a good health, able to pass the physical and health history assessment and (age 18years old and weight 50 kg) at least [4].

Generally, there are the following categories of donors: voluntary, family replacement and remunerated, Blood donation is motivated by the various factors like altruism, social pressure, and behavior and replacement needs[8] A voluntary donor who is donates blood for altruistic reasons. Moreover, a replacement donor who is donates blood for particular patient. The safest donors who are peoples voluntary donate blood once or twice yearly [9, 10].

## Objectives of the study were to

- 1- Assess the level of knowledge, attitudes and practices regarding the bases and process of blood donation among a sample of volunteers in holy Karbala city.

- 2 -Identify the factors that motivate individuals to donate blood.
- 3 -Identify the barriers for blood donation.

### Subjects and methods

The subjects of the study were 446 individuals which were located in Holy Karbala city/ Iraq, were selected by simple random sampling by using the close-ended KAP questionnaire which was designed based on the study objectives, it was administered to the participants and the results were consolidated and tested for any statistical significance, where ever required by the tests, for obtaining the significance of the difference in the proportions.

### Statistical analysis

Data input to computer file for storage and Analysis Statistical package for the social sciences (SPSS) version 18 used for data description and analysis, Descriptive statistic included the use of frequencies and percentages.

### Results

The age of the participants ranges from 18-57 years with a mean age  $\pm$  stander deviation (SD) (31.48 $\pm$ 10.01) of volunteers and highest percentage of the participants was (41.9%) in the age groups (20-29), while the lowest percentage (4.9%) in the age group (<20). Regarding gender distribution, the highest percentage of the participants was males (94.6%).While regarding residence, majority of the participants (73.3%) from urban area .It is found that the highest percentage of the participants was (41.5%) for whom had Free job. The current study showed the participants were from various levels of education, the highest percentage of volunteers were in the level of Institute (35.7%).all that showed in the table (1).

**Table (1): The distribution of the participants according to demographic characteristics.**

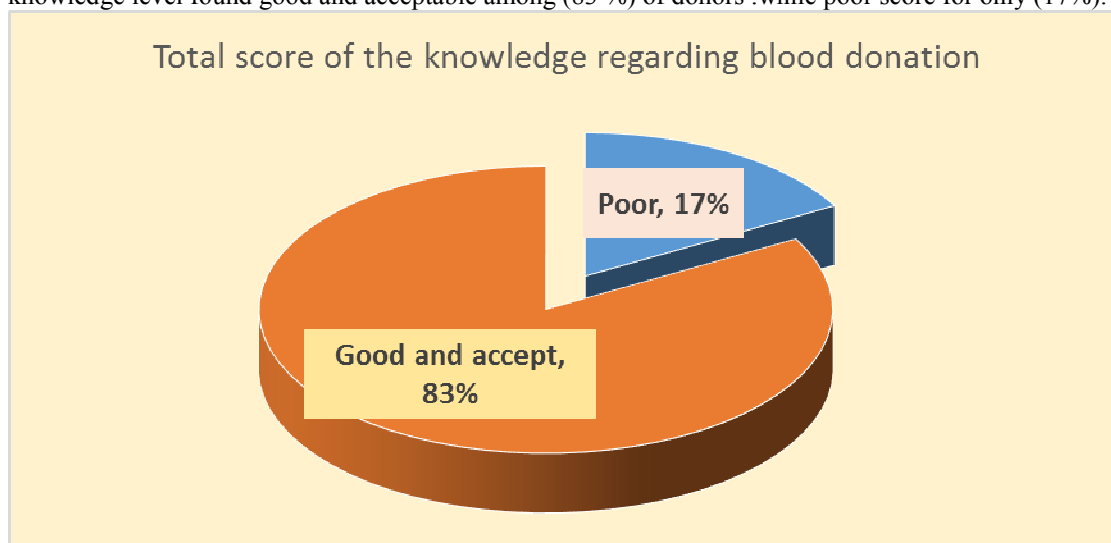
Variables		Frequency	Percent
Age groups	<20	22	4.9
	20-29	187	41.9
	30-39	117	26.2
	40-49	96	21.5
	>=50	24	5.4
Gender	Male	422	94.6
	Female	24	5.4
Residence	Urban	327	73.3
	Rural	119	26.7
occupation	Student	185	41.5
	Employer	104	23.3
	Retired	5	1.1
	Free job	152	34.1
Educational level	less than or Primary	132	29.6
	Intermediate	108	24.2
	Institute	159	35.7
	Graduate	47	10.5
<b>Total</b>		<b>446</b>	<b>100.0</b>

Table (2) shows the distribution of the participants according the general information about blood. Out of 446 the participants, (75.3%) cited that blood donation is good for own health, while the less information of the participants were (48.4 %) about the functions of blood is balance of body temperature.

**Table (2): knowledge volunteers regarding blood donation.**

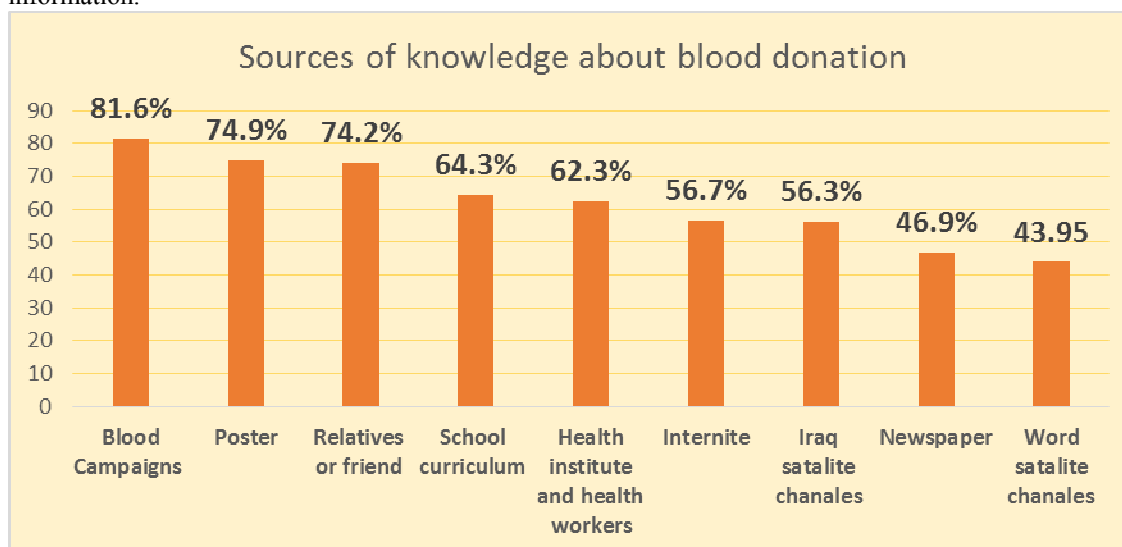
knowledge Question	Answers (Total No.=446)					
	Yes		Don't know		No	
	No.	%	No.	%	No.	%
Blood donation is Good for own health	336	75.3	42	9.4	68	15.2
The age limited of blood donation 18 - 60 years.	278	62.3	54	12.1	114	25.6
the functions of blood Water balance regulation	271	60.8	70	15.7	105	23.5
The functions of blood O2 and CO2 transportation?	254	57.0	84	18.8	108	24.2
The minimum weight limit of the donor 50 kg?	241	54.0	75	16.8	130	29.1
Bone marrow is the site of blood formation in the body	221	49.6	113	25.3	112	25.1
The functions of blood is balance of body temperature?	216	48.4	108	24.2	122	27.4

Figure (1) show the knowledge score on blood donation among participants of blood donors. The overall knowledge level found good and acceptable among (83 %) of donors .while poor score for only (17%).



**Figure (1): Total score of the knowledge regarding blood donation.**

Figure (2) shows the motivation and sources of information for blood donation, maximum number of the respondents (81.6 %) of blood donors thought that blood campaigns considered the best way to convert non-donor persons to voluntary donors, about (75 %) of donors replied that poster and relatives or friends play an important role to encourage donation. About (65 %) of volunteers said that the school curriculum & health institute and health workers the source of information. About (57 %) the participants replied that the internet and Iraq satellite channel, while only (< 50 %) regarding newspaper and world satellite channels sources of information.



**Figure (2): sources of knowledge about blood donation.**

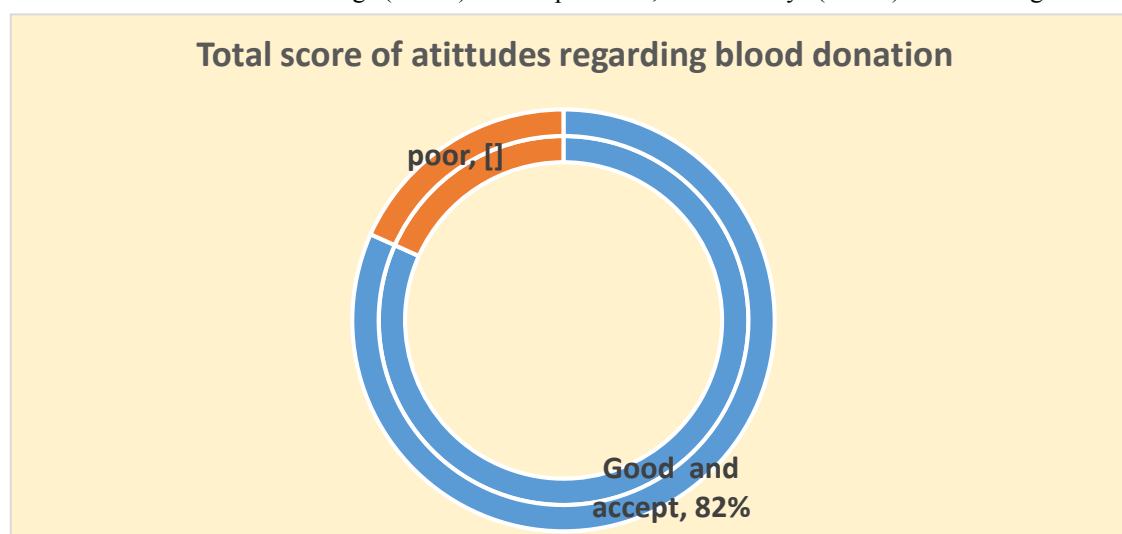
Table (3) shows the attitudes of donors regarding blood donation. Out of 446 volunteers, the majority of

participants among blood donors (87.9%) agree that blood donation is importance for patients care. About (86 %) of volunteers agree that blood in the bank is safe and responding for the necessary to do cross matching test before donation agree to doing that. While (79.4%) of donors disagree with pregnant women can donation of blood. higher percentage (61.0%) disagree to give incentives to donors.

**Table (3): Attitudes of the participants regarding blood donation**

Attitudes Question	Answers (Total no.=446)			
	Agree		Disagree	
	No.	%	No.	%
Blood donation is importance for patients care?	392	87.9	54	12.1
Blood donation in the bank is useful?	383	85.9	63	14.1
Necessary to do cross matching test before donation?	376	84.3	70	15.7
Can be pregnant women donation of her blood?	92	20.6	354	79.4
Necessary to give incentives to blood donors?	174	39.0	272	61.0

Figure (3) shows the attitudes score on blood donation among volunteers. Positive attitudes towards blood donation were observed among (82 %) of respondents, while only (18 %) shown negative attitudes.



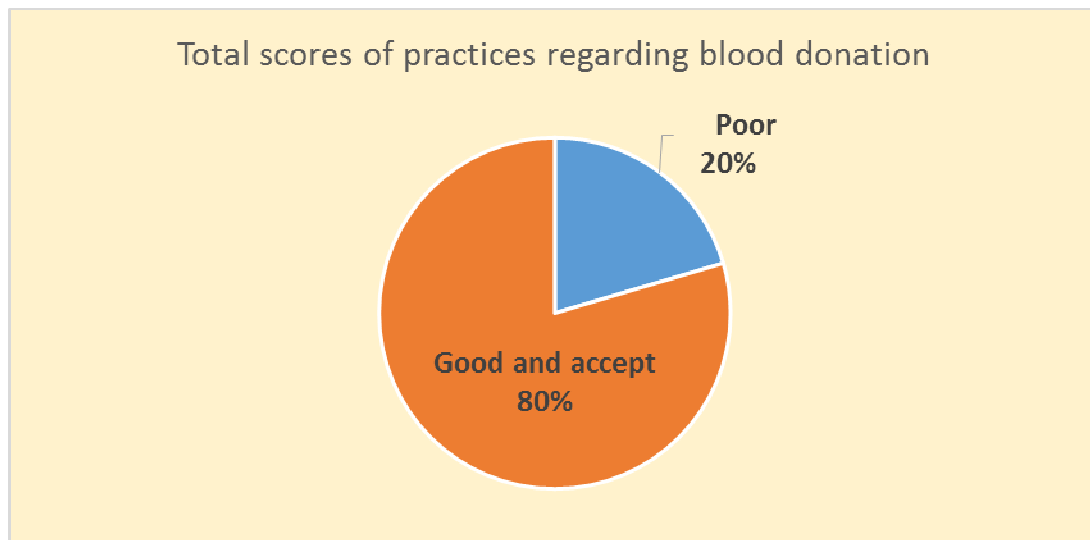
**Figure (3): Total scores of attitudes regarding blood donation.**

Table (4) shows the details of blood donation practices among volunteers. Regarding reasons of donation, Majority of the donors (77.9 %) blood donation as religious or humanitarian duty, (13.6%) Donated blood was for family members or friends (replacement donors) and (8.5%) represent blood donation is good for health(voluntaries) , (89.3%) don't had any symptoms after donation. Regarding the reasons for non- donation previously. Out of 446 donors, (64.6%) replied that they were 'No one asked them for blood donation, about (60%) said that the bank is far and no time to donate and fear of needle' or diseases transmission. (57.4 %) replied Ignorance & no know the benefit of donation. (86.3%) willing to blood donation in future and Majority of the donors (78.7%) said no need incentives for help others practically whom need blood.

**Table (4): Details of blood donation practices among blood donors**

Practices Question	Answers (Total no.=446)			
	Yes		No	
	No.	%	No.	%
<b>Reasons of donation</b>				
Blood donation as religious or humanitarian duty	347	77.9	99	22.1
Donated blood was for your family members or friends (replacement donors)	61	13.6	385	86.4
Blood donation is good for health(voluntaries)	38	8.5	408	91.5
Have you had any symptoms after donation	48	10.7	398	89.3
<b>Why not Donate your blood previously</b>				
No one asked me to donate	288	64.6	158	35.4
fear of needle' or disease transmission	274	61.4	172	38.6
The donation place is far , Iam busy& no time to donate	268	60.1	178	39.9
Ignorance (do not know the benefit of donation )	256	57.4	190	42.6
Wishing to the blood donation in future	385	86.3	61	13.7
Does your blood donation if given incentives	95	21.3	351	78.7

Figure (4) show the total scores of practices; Most of the donors (80%) had good scores.



**Figure (4): Total scores of practices regarding blood donation.**

## **Discussion**

### **Knowledge**

Is possessed by respondents (blood voluntaries) refer to their understanding of topic.

### **Attitude**

Refers to their feelings toward this subject, as well as any preconceived ideas they may have towards it.

### **ractice**

Means the application of rules and knowledge that leads to action .

Refers to the ways in which the respondents demonstrate their Knowledge and attitudes through their actions. the triad of knowledge, attitude, and practice in combination governs all aspects of life in human societies, and all three pillars together make up the dynamic system of life itself [13]

In spite of the rapid development, a true substitute for blood will not be available for many years. The only source of blood is blood donation and maintaining an adequate blood supply is an issue of concern to health planners especially with the increase in demand. Therefore, understanding the beliefs, level of knowledge and attitudes associated with blood safety and donation is important.

The age distribution in this study revealed that (41.9%) of the respondents of donors were between 20 - 29 years of age ,the same result found in a study done by Majeed, 2006 in Iraq, who found that most of the participants between 18-30 years of age[11] and Najd Alfouzan ,2014in KSA [12].

According to World Health Organization (WHO), should be the special target group young people because they are generally full of enthusiasm and zeal and form a great part of the population [8] and This may be due to the altruism, religious factor more awareness in this age group .

This study showed donation of blood was higher among males (94. 6%) than females; the same findings were observed in Iraq by Majeed, 2006 [11]. and, Al-Drees, 2008 and Alfouzan, 2014in KSA [12, 14], this finding was similar to the finding of a study conducted in Iran [15]. where 59.8% of males and 15.9% of females previous donors. (94%) were males and only (6%) were females. This result is similar to what observed in India, where 93% of donors were males and 7% were females. [16].Shahshahan, 2005 [17]. Muhammad et al., 2010 in Pakistan [18], and Danven at the New York [19].

Women generally tend to donate blood less of men, Factors like anemia, prevalent customs, beliefs and lifestyle, multiple pregnancies, etc. are some of the reasons for low donations by women in Asian developing countries [20, 21]. Trend of blood donation among women of all over the world, not only in developed countries but also in developing countries is equally less[22].Whereas in France, approximately 50% of blood donors are women [23].and in the American study, 50% of the women had history of blood donation[24].

Majority of the participants were from urban areas. This differs from study conducted by Muhammed et al. 2010 in Pakistan who found that more than 60% of donors from rural areas [18]. These differences may be due to that in urban areas the people have more intentions to donate blood and because the center in an urban areas.

Regarding occupation, the highest of the participants reported among students 41.5 %.

In this study, almost individuals were from various levels of education. Our findings are also supported by another studies conducted by Majeed, 2006 in Iraq [11]. In addition, in parts of the world Alam, 2004 and

mentioned that blood donation did not cross their minds in KSA [25, 12]. Shahshahan & Khadeer 2004 in Iran [18, 19]. Wiwanitkit V., 2000 in Thailand [6].

The overall knowledge level found good and acceptable among (83 %) of donors this differs from what found by Abolfotouh et al, 2014 in KSA [28], this different may be due to the participants were blood volunteers.

Responses donors for questions regarding why they are donating blood, Majority of the donors (77.9 %) blood donation as religious or humanitarian duty this result supported by Alfouzan 2014, in KSA, [12] and Abolfotouh et al. 2014 in KSA [28] have result were 71.3% and 58.7% of all participants respectively .

(13.6%) Donated blood was for family members or friends (replacement donors) this result was supported by Abolfotouh et al. 2014 in KSA [28] and (8.5%) represent blood donation is good for health.

Those responses reflects a situation in which blood donated largely as religious or humanitarian duty and implied that donation for any others reason was a low priority (voluntary blood donation).

This is in accordance with some studies that have observed a low percentage of voluntary donors in developing countries compared to more developed nations Majeed, 2006 Iraq [11]. Alam in KSA [25]. According to the WHO report, only 16% of the blood in developing countries is from voluntary donors [29]. Therefore, different fears, and lack of information and motivation may serve as important issues to be addressing when developing donor's recruitment programs or campaigns to clear misconceptions about blood donation. Voluntary blood donation is related to many factors including awareness and attitude, beliefs and traditions about blood donation and donor recruitment activities in that society [29,30].

The most important reasons for non-donating blood previously in this study was no one asked them for blood donation, unfit' for donation due to weakness, the bank is far , busy and lack of time, fear of needle' or disease transmission , ignorance. the result was supported by another studies It has been reported that lack of time, and fear of complications are barriers to blood donation in both sexes. [18,31]. Time constraints may reflect the changing structure of society. In the current study, have no time was reported by more than half of participants. This might be attributable to the Iraqi culture, which obligates males fully satisfy their families' needs and may lead to an inability to find free time to visit the donation centers. This finding had supported by the findings of studies conducted by Majeed, 2006 In Iraq [11]. Alfouzan, 2014, Abolfotouh et al, 2014 and Alam, 2004 in KSA [12, 28, 25]. Shahshahan, 2004 in Iran [18]. Whereas various studies had reported fear of complications, fear of hospitals, lack of awareness, while false beliefs and religious traditions as the main reasons for not donating blood to those of Olaiya et al, 2004 in Nigeria [32]. and Glynn et al. 2003 in United States [29].

Most of the respondents revealed that the best way to encourage non-donors for donation through blood campaigns they received information regarding blood donation from it, the rest revealed that they were information regarding blood donation through newspapers and books, friends/relatives. These results were similar to other reported studies in Middle East of Alam & Al-Drees in KSA [25, 14]. Shahshahan et al, 2004 in Iran [26]. Sanayaima et al, 2012 in Indian [33] who found, most of the respondents acquired their information about blood safety and donation and its associated services through television and radio mainly.

In respect the answers about donation guidelines, the majority of the respondents (62.3%) know the appropriate age of blood donation, this result agreement with Sushant Kumar Meinia et al ,2016 and Sonam Kumari 2015 in India [8, 34].

While differ from other study conducted in KSA by Alfouzan, 2014 has result was 33.2% [ 12] the opinion that no upper age limit exists for donation.

However, in fact a person between 18-65 years can donate blood. This finding also supported by other studies to Majeed, 2006 in Iraq [11]. Alam and Al-Drees in KSA [25, 14]. In addition, in Iran by Hussien, 2009 [35]. and other parts of the world in Indian (Mitra K et al. and Nanded et al. 2001) [36, 37].

Minimum donor weight 50 kg (110 lb.) recommended to donate the usual 450 + 45 mL of blood because a 50 kg person has a blood volume of approximately 3750 mL, donation of 405-495 mL would represent approximately 10-13% of the donor's volume [38]. The current study showed that higher percentage (54.0%) know minimum donors weight this result is supported by Sushant Kumar Meinia et al .2016 in India [8 ]. because had misconception that a donor should have body weight more than 50 kg. This result is disagrees with other reported study done by Majeed, 2006 in Iraq, who found that his respondents correctly answered by only (34.9%) of donors and (49.5%) of non-donors [11]. In addition, in Middle East particularly KSA by Alam, 2004 and Alfouzan, 2014 they found that 28%, 40.1%, respectively, about knew the minimum recommended necessary weight [25, 12]. This might related to the fact that these information taught during years of schooling.

According to the results of the present study regarding the blood formation site, the majority of the respondents (49.6%) of donors know the blood formation site. This result is similar to other reported study done by Majeed, 2006 in Iraq, who found that (55.5%) of donors known, that bone marrow is the blood formation site [11].

Regarding knowledge score was observed as good (83 %) of donors , this finding differ to study of Majeed,

2006 in Iraq who found Approximately half of the donors and non-donors had poor scores [11].

Overall knowledge was good and acceptable which could be related to the fact that the subject of blood donation in Iraq is more important and needed particularly through the last three years when increase injures of soldiers and popular mobilization through defiance about Iraq. In addition, that this subject focused upon through the mass media and education courses about it done or practiced in the health facilities.

Positive attitude towards blood donation was observed among (82 %) of respondents this same with result found by Mostafa A. Abolfotouh et al.2014 in KSA [28].

Blood banks always follow screening guidelines and eligibility requirements to make sure that blood donation will not harm the donor. Vast majority of the individuals (85.9%) agreed with the fact that 'blood donation is good for health' all of them felt that blood donation was a noble act. This finding is in agreement with other reported study done by Majeed, 2006 in Iraq [11], Al-Drees, 2008 and Alfouzan , 2014 in KSA [12,14]. In addition, by Zaller, 2005 in China [39]. In addition, by Olaiya et al. , 2004 in Nigeria [32] , Kumari S. et al. 2015 in India [34]. Only (14.1%) of the participants in the current study believe that blood donation is harmful to the donor. Therefore, decreasing the perception that the blood donation is harmful can lead to an increase in the pool of blood donors. Thus, the attitude of the participant in our study was positive towards blood donation.

The present study found greater than (86.3%) of the participants agree to donate blood in future, this finding is similar to others reported study done in middle east by Alfouzan,2014 in KSA [12 ] and Mostafa A. Abolfotouh et al. 2014[28], Mahmood, 2006 in Iran [40]. Moreover, disagree with studied Shenga et al., 2008 in India, who found that only 46% of the participants were willing to blood voluntarily [41]. The willingness to blood voluntarily was much higher (86.3%), which augurs well for the drive towards voluntary blood donation.

According to some researchers done by Olaiya et al. 2004 in Nigeria [32]. The main motivating factor that mobilizes prospective donors is their awareness of the patients' need for blood in combination to one's presumption that one day they may also find themselves in need of blood transfusion.

The present study, the majority of participants were with the opinion that appreciation and acknowledgement is best of all rewards, because the real remuneration is from Al Mighty Allah Taala in the form of jannah. In KSA study done by Alam, 2004, showed that blood donors were with the opinion that blood donor certificates can be the major incentive for blood donation and asked for blood credit cards should be issue so that if blood is required they can get it by showing the card, and asked for extra leave for blood donation. However, few of the blood donors was with the opinion to get money for blood donation Abolfotouh et.al. 2014 KSA [28, 25]. In Iran a study conducted by Shahshahan, 2004 showed that the most important motivation was Sense of moral duty and altruism, Abolfotouh et.al. 2014 KSA [28, 26]. In the American, study done by Glynn et.al. Incentives like blood investigations (serum cholesterol, prostatic specific antigen and complete blood count), increase in the number of blood donors that showed by study done at 2003 [29].

The majority known Cross matching, they thought that the blood that given in donation is the same blood that transfused directly to their patients. Few persons among blood donors (15.7%) thought that cross-matching test before donation is not necessary. While (84.3%) of donors agree .This results is differ from to Majeed, 2006 in Iraq, who found that (88%) of donors and (94.2%) of non-donors not know cross matching [11].That may be due to increase information about the role and important of blood donation.

Majority of the donors (86.3%) had donated in the previous year. Few donors (13.6%) had not donated blood in the past. These results disagree with a Study conducted by Alfouzan ,2014 in KSA and Shahshahan, 2004 In Iran, there found (45.8%) ,(37.9%) respectively , of the people had voluntarily donated blood previously [28,26].

This may be due to that many reasons first may be people believe that the donation of blood is good for their health & because increase of explosions in the country that is result in willing to donate to help other people.

Post-donation reactions were experienced by (10.7%) of donors. This agree with what had been reported by Majeed, 2006 in Iraq, Who found that (20.1%) of donors had developed post-donation reactions [11] and by Sushant Kumar Meinia et al .2016 in India [8 ] Who found that (10.77%) respondents had donated blood experienced some kind of problem during blood donation process .

### **Conclusions:**

There is good and acceptance in basic knowledge and conceptions of volunteers regarding blood donation compared with other studies. Majority of respondents had good attitudes & believe that blood donation is useful, due to sufficient information, they are willing to take part in blood donation ,The act of donating blood was associated with voluntary rather than with replacement donation. Fear of needle was the main reason why people are reluctant to donate blood. The overall practices level of donors was higher, most of the participants with opinion that appreciation and acknowledgement is best of all rewards because the real remuneration is from Al Mighty Allah Taala in the form of jannah.

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