People Knowledge Regarding Blood Donation (A sample from Baghdad)

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Abstract:

Background:. The transfusion of blood, its components & its products is a widely used form of supportive therapy, which has expanded greatly due to the development of more sophisticated medical procedures requiring the transfusion of blood.

Objective: To assess the general knowledge of people regarding the process of blood donation through a sample of donors and non-donors from Baghdad city.

Methods: A total of 500 individuals were interviewed, 292 blood donors that were attending the national blood transfusion center, and 208 non-donors who were taken as a control group for comparison. A questionnaire form was constructed to check for the overall knowledge of the respondents about the practice of blood donation. The level of knowledge was assessed using a special scoring system by assigning a score of **2** for the right answer, **1** for the incomplete answer and score of **zero** for the wrong answer.

Results: Only 7 (2.4%) of donors, but none of non-donors, had good scores (≥70%). Most of the donors and non donors got medium scores (56.8%) and (53.4%) respectively, while 119 (40.8%) of the donors and 97 (46.6%) non-donors got poor scores (<50%). The mean scores of the donors and non-donors were 27.72 and 27.07 respectively. The median was 27 for both donors and non-donors.

The highest score was seen in the age group 31-40 years; the score of males was higher than that of females. It was also higher for university students and people with higher education and among the governmental employees. Significant association was found between the score of knowledge and age/occupation, but not with any other variable.

Conclusion: The overall knowledge is very poor, may be because the subject of blood donation is not included in the teaching curricula of the primary and secondary schools and is not focused upon through the mass media or in the health education process.

Key wards: Blood Donation

Introduction

The most successful & most widely used transplant in the history of medicine is blood. Despite the enormous knowledge gathered over many decades about what is possible and what is impossible in blood transfusion, each transfusion of blood or of a blood component remains a therapeutic procedure involving risks [1].

A safe blood transfusion is an extremely cost-effective measure in developed countries such as the USA, where 2% of the health care budget which is spent on blood transfusion services benefits 50% of the health services [2].

Globally, it is estimated that more than 75 million units of blood are donated each year. Approximately 60% of this blood is donated in the developed countries. The WHO data analyses (1998-1999) showed that in the developing countries, less than 40% of blood donations are from voluntary non- remunerated blood donors, while in the developed, these donors form 98% of blood donations[3].

The WHO Global Database on Blood Safety (GDBS) has been an invaluable tool for assessing the global situation on blood safety and obtaining the best available information on blood transfusion services in individual member states. Analyses of the data have contributed to identifying priority areas in need [4].

The objective of this study is to assess the general knowledge of people regarding the process of blood donation through a sample of donors and non-donors from Baghdad.

Subjects and methods

This is a cross–sectional study with an analytic element conducted in the National Blood Transfusion Center in Baghdad during the period from January through July 2006.

Sample and sampling technique:

The sample is a convenient one taken by pooling all the blood donors attending the center during a period of 6 months.

A total of 500 individuals were interviewed; 292 blood donors that were attending the National blood transfusion center, and 208 non-donors as a control group to compare them with the donors and see if there is any difference in the knowledge between them regarding the basis and process of blood donation. This group was taken from similar age limits to secure good matching of the two groups, it included:

- Teachers of some primary and secondary schools
- University students from certain colleges.
- Attendants of primary health care centers.

The respondents were given a briefing on the objective of the study. A verbal consent to participate in the study was taken prior to each interview.

A questionnaire form was constructed for the process of data collection, the questions were administered through an interview that was done by the researcher, some of the questions were borrowed from global researches [5]. We tried to put questions that include information about general knowledge to meet the educational level of the lay people and to avoid the difficult, loaded or double barreled questions.

A pilot study was implemented on a sample of six individuals, to estimate the time needed for the interview and the probable difficulties in the questions. This sample was excluded from the study target.

The interviews with the donors were done by visiting the center two days per week, (10 respondents/day), each interview lasted about 20-30 minutes.

The questionnaire consisted of six parts as follows:-

Part I:

Information on demographic data like, age, sex, marital status, education level and employment status in order to identify the relationship between the demographic characteristics of the respondents and their knowledge about blood donation.

Part II:

Is a set of 5 questions includes general information about blood (blood groups, blood components, blood formation site, blood volume in the body, and amount of blood loss that leads to death).

Part III:

contains 11 questions that inquire about the donation procedure: age limit and minimum weight of donors, inter-donation interval, total blood replacement in the body, amount of blood taken in each donation, time of the donation procedure, amount transfused to the recipient per time, eating before donation, smoking withdrawal before donation, storage temperature and expiration time of a blood pint.

Part IV is a set of 4 questions includes information about blood donation and health.

Part V:

Digs for the reason of blood donation (for donors), reasons for non donation for non-donors, number of previous donations, and post donation reactions.

Part VI:

(4 questions) includes indications and contraindications of blood transfusion.

The responses were put in the form of selecting the right answer from multiple choices given for the direct questions and a list for the open ended questions.

The level of knowledge was assessed using a special scoring system by assigning a score of 2 for the right answer, 1 for the incomplete answer and score of zero for the wrong answer. The total number of questions was 34; five of them were about demographic data, one about the post-donation reaction and one about the source of information, the remaining number is 27 questions that were given a score, the final score was multiplied by a factor to make it out of (100) for simplicity. The level of knowledge then was categorized into 3 groups: poor (<50%), medium (50-69%) and good (70-100%). The final scores of the donors and non donors were then compared to find out the difference between them. On the other hand the relationship was tested between the level of knowledge and some demographic factors.

Statistical analysis was done using SPSS version 12. Chi-square test was used. Differences between observations were considered significant at P value <0.05.

Results

Table (1) shows the distribution of the studied sample by age, sex, education and occupation, two thirds of the sample (65.2%) was between 18-30 years of age. The males formed 53.4% of the sample while 46.6% were females. University students constituted 39.6% of the sample.

In respect to the occupation; 124 (24.8%) were governmental employees, 92 (18.4%) private workers, and 136 (27.2%) were students.

Table (2) shows the reasons for blood donation and non-donation. Out of 292 donors, 144 (49.3%) donated blood for their family members or friends, 67 (22.9%) were volunteer blood donors, 41 (14%) said that blood donation is good for health and 40 (13.7%) donated blood as a religious duty.

Out of 208 non-donors, 107 (51.7%) replied that they were not asked by any one to donate blood, 70 (33.8%) feel that they are 'unfit' for donation (but none was aware of his hemoglobin level), 11 (5.3%) are afraid of the needle prick, and 19 (9.2%) did not donate because of 'fear of disease transmission'.

Regarding the frequency of blood donation, 178 (61%) have donated blood once, 83 (28.4%)

donated 2-5 times and 31 (10.6%) donated more than six times.

Table (1): Demographic characteristics of the sample

		Donor		Non-donor		Total	
		No	%	No	%	No	%
Age	**≤30 years**	170	58.2	156	75.0	326	65.2
	31-40 years	74	25.3	27	13.0	101	20.2
	41-50 years	30	10.3	15	7.2	45	9
	>50 years	18	6.2	10	4.8	28	5.6
Sex	**Female**	90	30.8	143	68.8	233	46.6
	Male	202	69.2	65	31.3	267	53.4
	Total	292	100	208	100	500	100
Education	**Illiterate**	9	3.0	2	1.0	11	2.2
	Primary school	34	11.6	14	6.7	48	9.6
	Secondary	50	17.1	53	25.5	103	20.6
	College	99	33.9	99	47.6	198	39.6
	Higher	100	34.2	40	19.2	140	28
	Total	292	100	208	100	500	100
Occupation	**Governmental**	58	19.9	66	31.7	124	24.8
	Private worker	71	24.3	21	10.1	92	18.4
	Student	32	11.0	104	50.0	136	27.2
	Others	131	44.9	17	8.2	148	29.6
	Total	292	100	208	100	500	100

Table (3) shows the total scores of the answers; only 7 (2.4%) of donors, but none of non-donors, had good scores (≥70%). Most of the donors and non donors got medium scores (56.8%) and (53.4%) respectively, while 119 (40.8%) of the donors and 97 (46.6%) non-donors got poor scores (<50%).

This table also shows means of total scores of the donors and non-donors, which were 27.72 and 27.07 respectively. Minimum-maximum scores were (7-44) for the donors and (14-39) for the non-donors. The median was 27 for both donors and non-donors.

Table (4) shows the relationship between the score of knowledge and demographic characteristics of the donors. The highest score was seen in the age group 31-40 years, higher in males (than females), in university students and people with higher education and among governmental employees. Significant association was found between score of knowledge and age, also with occupation, but not with any other variable.

Table (2): Reasons for donation, post donation reactions, and source of information

		Donors		*Non-donors*	
		No	**%**	**No**	*%*
Reason for donation	**Replacement**	144	49.3	-	-
	Voluntary	67	22.9	-	-
	Good for health	41	14.0	-	-
	Religious duty	40	13.7	-	-
Reason for non-donation	**No request**	-	-	107	*51.7*
	Not fit	-	-	70	*33.8*
	Afraid of needle prick	-	-	11	*5.3*
	Fear of disease transmission	-	-	19	*9.2*
No of previous donations (including this)	**1 donation**	178	61.0	-	-
	2-5 donations	83	28.4	-	-
	6 and more	31	10.6	-	-
Post donation reactions	**Developed**	59	20.1	-	-
	Not developed	233	79.9	-	-
Source of information	**Friends/relatives**	233	79.9	-	-
	Radio/TV/Mosques	46	15.8	-	-
	Newspaper/campaign	*13*	*4.5*	-	-

Table (3): Total scores of the answers

	Donor		Non-donor		*Total*	
	No	**%**	**No**	**%**	**No**	*%*
Poor (<50%)	119	40.8	97	46.6	216	*43.2*
Medium (50-74.9%)	166	56.8	111	53.4	277	*55.4*
Good (≥75%)	7	2.4	-	-	7	*1.4*
Total	292	100	208	100	500	*100*

	Donor	***Non-donor***
Mean ± SD	27.72 ± 6.05	*27.07± 5.15*
Min-Max	7.00-44.00	*14.00-39.00*
Median	*27.00*	*27.00*

Table (4): Scores of donors by age, sex, education, and occupation

		Poor		Medium		Good		*Total*	
		No	**%**	**No**	**%**	**No**	**%**	**No**	*%*
Age	**18-30 years**	78	45.9	88	51.8	4	2.4	170	*58.2*
	31-40 years	23	31.1	51	68.9	-	-	74	*25.3*
	41-50 years	8	26.7	19	63.3	3	10.0	30	*10.3*
	>50 years	10	55.6	8	44.4	-	-	18	*6.2*
	Total	119	40.7	166	56.8	7	2.3	292	*100*
	χ^2 =18.043 P = 0.006 (pooling of cells was done)								
Sex	**Female**	36	40.0	51	56.7	3	3.3	90	*30.8*
	Male	83	41.1	115	56.9	4	2.0	202	*69.2*
	Total	119	40.7	166	56.8	7	2.3	292	*100*
	χ^2 = 0.494 P = 0.781								
Education	**Illiterate**	2	66.7	1	33.3	-	-	3	*1.0*
	Read& write	3	50.0	3	50.0	-	-	6	*2.1*
	Primary	12	35.3	22	64.7	-	-	34	*11.6*
	Secondary	21	42.0	29	58.0	-	-	50	*17.1*
	College	38	38.4	58	58.6	3	3.0	99	*33.9*
	Higher	43	43.0	53	53.0	4	4.0	100	*34.2*
	Total	119	40.7	166	56.8	7	2.3	292	*100*
	χ^2 = 5.650 P = 0.844 (pooling of cells was done)								
Occupation	**G. Employee**	19	32.8	35	60.3	4	6.9	58	*19.9*
	Worker	23	32.4	48	67.6	-	-	71	*24.3*
	Student	14	43.8	17	53.1	1	3.1	32	*11.0*
	***Others**	63	48.1	66	50.4	2	1.5	131	*44.9*
	Total	119	40.7	166	56.8	7	2.3	292	*100*
	χ^2 = 13.625 P = 0.034* (pooling of cells was done)								

* Others: retired, housewives, unemployed and military subjects.

Discussion

Information on blood and blood products safety and on blood transfusion services in countries and regions has to be collected and analyzed in order to assess needs and formulate strategies to plan, implement and evaluate activities[4].

In this study; most of the respondents were young adults, two thirds were between 18-30 years of age as blood donors are usually young adults.

Most of the studied sample had good general information regarding the first group of questions (ABO blood groups, blood components, blood formation site, blood volume and blood loss that leads to death), this may be related to the fact that some of these information are taught during years of schooling.

In respect to the answers about the donation procedure, the majority of donors and non-donors replied that only young adults could donate, the correct answer is that there is no upper age limit exists for donation; a person of 18-65 years old can donate blood [6].

Only half of the donors and quarter the non-donors knew that less than half Liter (one pint) of blood is taken from a donor in each donation session[8], may be because they think that the blood bag volume is one Liter (1000mL). A study from Kingdom Saudi Arabia revealed that 73.2% of non-donors do not know how much blood is extracted in each donation[6, 7].

Recommendations like 'to eat'[9] and 'to stop smoking' at least two hours before donation process[10] were more precisely answered by the donors, may be because they have been told these instructions through their previous donations.

The vast majority of the respondents agreed that 'blood donation is good for health'[11] but none of them knew exactly why it is so.

About half of the non-donors have the misbelieve that there are diseases transmitted to donors during the process of blood donation and this may form an obstacle against the population acceptability of this practice, it is a well known

fact that there is no disease transmission from the recipient to the donors during the process of blood donation[12].

The majority of donors and non-donors do not know about the risks of blood transfusion such as blood group incompatibility and transmission of diseases like HIV, hepatitis, and malaria, although they are aware of the fact that there are diseases transmitted to recipients through blood transfusion process. Fear of disease transmission was regarded as a cause for non-donation[13].

Approximately one tenth of donors and non-donors knew the indications and contraindications of blood transfusion. Cross matching is not known by the majority, they think that the donated blood will be transfused directly to their patients.

In respect to the questions to donors regarding why they are donating blood, half of them stated that they are donating blood for their family members or friends. This response reflects a fact that blood is donated mostly for the family member on need (replacement) and implies that donation for any other reason is a less important 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[5]. A study from KSA revealed that the reasons for donation were as follows: 14.8% voluntary, 48.7% replacement and 36.5% statutory blood donation[6]. In the United States, the majority of fresh blood products are collected from unpaid volunteers. Paying donors for blood was forming over 50% of blood donations in the developing countries[14], but now it started to be declined when active researches in the early 1970s demonstrated that paid donors had a substantially higher prevalence of hepatitis[15]. Similarly, in response to questions to non-donors regarding why they had not donated blood, half of them replied that they were 'not approached for blood donation by anyone'. The second major reason for non-donation was the 'perception of a harmful effect such as weakness, fear of needle prick and fear of catching diseases. A study from KSA revealed that the reasons for non-donation were: not approached by anybody (42.6%), unfit to donate blood due to weakness (38.3%), might have to donate in future to relatives (7.6%), fear of needle pricking (6.7%) and of disease transmission (4.8%)[6].

In the current study, 61% of the donors donated blood for the first time. It is becoming increasingly difficult to retain first-time donors, with over half of all new donors failing to donate a second time[16]. Globally, it has been found that 80% of first time donors every year give up the practice of \blood donation [17].

Post-donation reactions were experienced by (20.1%) of donors. Blood donation reaction is a relatively rare phenomenon that affects less than 1% of donors[18]. The occurrence of unpleasant physical reactions during the donation process is believed to be a particularly impediment to retention 'donor non-return' [19].

Friends and relatives are a major source of information regarding the voluntary blood donation. Only a minority expressed that they have heard about blood donation on the mass media. Regular programs advertisement regarding safe voluntary blood donation should held on television/radio and other mass media resources[20].

Approximately half of the donors and non-donors had poor scores. Only (2.4%) of donors, but none of non-donors, had good scores and low mean of the answers, but the mean was generally higher in donors than in non-donors may be because they have got some information via their previous donation experiences.

The overall knowledge was very poor, may be because the subject of blood donation is not included in the teaching curricula of the primary and secondary schools and not focused upon through the mass media or in the health facilities education activities.

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