

Awareness, Attitude and Practice of Blood Donation among Primary Health Care Attendees in National Guard King Abdulaziz Hospital - Al Ahsa Saudi Arabia, 2017

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Abstract: A cross sectional study was conducted in the main primary health care center in King Abdul Aziz Hospital in Al Ahsa, Saudi Arabia between 1st of February to 15th of March 2018 aims to estimate the prevalence of blood donation in Al Ahsa, assess the awareness level regarding blood donation, determine the factors that influence this awareness via a self-administered questionnaire for PHC attendees. 378 participants were selected through simple random sampling technique from patients' registration in the reception area. Data was analyzed by SPSS software version 21. The prevalence of blood donation was 58.2%, 55.6% assumed that the media play an effective role in motivating people for blood donation and 85.2% reported that to have mobile blood donation caravans in public areas is a good way to motivate people to donate blood. 61.8% of participants with a high level of awareness regarding blood donation had donated before compared to 54.2% with low level of awareness ($P= 0.13$, OR 1.4).

Keywords: blood donation - Awareness - Primary Health Care Attendees - Saudi Arabia

1. Introduction

The regular voluntary unpaid blood donors are the cornerstone of a safe blood supply system. The WHO encourages all countries to establish blood services based on fully voluntary non-remunerated blood donations. About 108 million blood donations are collected globally every year. However, in many countries, demand exceeds supply and blood services face the challenge of making sufficient blood available [1].

This study aims to estimate the prevalence of blood donation in Al Ahsa, assess the awareness level regarding blood donation, determine the factors that influence this awareness, and determine the relationship between the awareness levels and the prevalence of blood donation for primary health care center (PHCC) attendees in King Abdul Aziz Hospital (KAH).

2. Literature Survey

Blood donation is the only process through which blood banks can maintain their blood supply [2]. Blood donors are classified into three types: unpaid volunteer donors, replacement donors, and paid donors. Volunteer donors donate blood without expecting any form of remuneration or benefit. Replacement donors donate blood to replace the blood used by their family members or friends. Paid donors donate blood and receive some form of remuneration or benefits [2]. In Saudi Arabia, blood transfusion system is a hospital-based blood banking system, therefore blood bank in each hospital takes the responsibility of safe and adequate blood supply. Replacement donors play a crucial role in maintaining adequate blood supply [2].

Several factors play a role in the recruitment and willingness of people to donate blood voluntarily. Various studies have revealed a significant association between the demographic data of the donors (namely, sex, age, and level of education) and their attitudes toward blood donation [3,4,5].

To encourage blood donation, the blood banks should implement suitable strategies to increase awareness among people and engender a positive attitude among them toward blood donation. Awareness and attitude regarding blood donation differ with traditions, cultures, religion, and level of education. Therefore, for a blood donation system to be successful in a society, it must function in accordance with these elements of the society. Altruism is the most prominent reason why people donate blood, aside from community needs and support, family assurances, and social pressure. On the other hand, fears, lack of knowledge, and inconvenience have been described to be the primary obstacles to donation [6].

Many previous reports have shown that people have insufficient knowledge, diverse attitudes, and many misconceptions about blood donation [3,7,8,9,10].

3. Methods/ Approach

A cross-sectional study was conducted in the main PHCC in KAH for National Guard in Al Ahsa, Saudi Arabia between 1st of February to 15th of March 2018. PHC includes the main center in addition to five small satellite centers and provides services to National Guard employees and their dependents. Main PHC consists of Family Medicine (FM), Well-Baby & vaccination clinics, surgical, dermatology, and dental clinics as well as other specialties. The estimated number of visitors is about 300 patients per day, and 23

physicians work on all weekdays, in addition to support staff.

This study targeted the attendees of main PHCC who were adults aged 18 years and above, regardless of their gender and residential status. Dental clinic attendees were excluded because the dental clinic is in a separate area of the building. Sample size was estimated by using one proportion equation for sample size estimation, which was 378 participants. The participants were selected through simple random sampling technique from patients' registration in the reception area, which was done by the medical records staff. Every second attendee who agreed to participate and who fit the study criteria was selected. After that, the participants were given a consent form and Arabic self-administered questionnaire. Two medical records staffs were trained on conducting the process of selection of participants and helping the illiterate participants to correctly fill the questionnaire. The study investigators supervised the process of data collection.

A previously validated questionnaire was modified and used after obtaining permission from Najd Alfouzan [4]. The questionnaire was first modified and then validated by a pilot study and two family medicine consultants. The study questionnaire consists of 30 questions on demographic data, knowledge, attitude, practice, causes for non-donation, and motivations for donation. For knowledge, the scores were "1" and "0" for correct and incorrect answers, respectively. Total knowledge scores ranged between 0 and 8, with the cutoff score of 4. For attitude, "1" was the score for strongly agree and agree, while the score for other choices was "0," and total attitude scores ranged between 0 and 4.

Data was analyzed using the Statistical Package for Social Sciences (SPSS) software. All variables were coded before entry and were checked before analysis. The age variable was converted to categorical. Frequency tables were created for general characteristics, knowledge, attitude, practice, and motivation for blood donation. Chi-square test was used to determine the relationship between awareness levels regarding blood donation and the prevalence of blood donation. Inferential statistics were assessed through P value of equal to or less than 0.05 and 95% confidence interval level, which consider the significant results. During bivariate analysis, several variable categories, like educational level, job classification, and blood group type, were merged.

The study was approved by Saudi Council of Health Specialties IRB and King Abdullah International Medical Research Center (KAIMRC), in addition to primary health care (PHC) department. Informed consent was obtained from the participants. They were allowed to refuse to participate in the study. All the information from the questionnaire was kept confidential.

4. Results/ Discussion

The study involved 378 participants, which included 287 males and 91 females. Their average age was 31.8 ± 9.1 , and 105 participants were single while 273 were married. The majority of participants had either secondary (48.7%) or

university educational (39.2%). Further, 59% worked in the military and 43.7% had blood type "O" (Table 1).

Although the majority of participants (82%) identified their blood group type to be O, only about 27% of them identified that it is a universal blood group type. The accurate minimum age for blood donation was known to 38.6% of participants. In addition, the minimum weight for blood donation and the minimum interval between two consecutive blood donations were known to 42.3% and 50.8% of participants, respectively. The percentage of participants who knew the location of the community blood banks was 77.8%, and 53.4% of participants realized that the diabetic and hypertensive patients could not donate blood. Almost 84.4% agreed that "blood banks screen the donated blood before transfusion" and 80.4% thought that some infectious diseases can transmit during blood donation, as illustrated in Table 2.

Almost 70.6% of participants were satisfied that blood donation is a part of altruism, 62.7% were satisfied that it is a religious duty and 77.3% were satisfied that it is a national duty. The concept of blood donation is a healthy habit was agreed by 83.9%.

As shown in Table 3, 96.8% reported that they encouraged their relatives and friends to donate blood and 24.6% had attended a course or symposium on blood donation. Nearly 92.1% of all participants answered that if they are requested, they will donate blood in the future. Regarding blood donation experience, 58.2% of the participants had a history of blood donation: 28.6% had donated blood once, 36.4% had donated it 2-5 times, and 27.3% more than 5 times. However, 7.7% had history of donating blood every year. Further, almost 48.2% of donors donated voluntarily, and 16.8% donated as replacement donors for their families or friends. Blood donation was a positive experience for 99% of the blood donors.

Common reasons for not donating blood were not thinking about it (42.4%), health problems (34.8%), lack of time (34.8%), and no access to blood donation centers (20.9%). Other reasons are explained in Table 3. More than half of the participants (55.6%) assumed that the media play an effective role in motivating people for blood donation and 85.2% reported that to have mobile blood donation caravans in public areas is a good way to motivate people to donate blood. The idea of one-day leave was considered a good incentive for donating blood by 86.8%, while 55.3% of the participants preferred no incentives.

Table 4 presents the distribution of demographic and blood donation awareness factors between blood donors and non-donors. There was a significant difference between the two groups in age, gender, marital status, educational level, profession, and attitude toward blood donation. Blood donors were more likely to be married ($P=0.01$, OR 1.8), males ($P=0.0001$, OR 14), in the age group of 30 years and above ($P=0.0001$, OR 0.46), with low educational achievement ($P=0.0001$, OR 2.1), military background ($P=0.0001$, OR 6.4), blood group O ($P=0.05$, OR 1.2), and have a positive attitude toward blood donation. Almost 61.8% of participants with a high level of awareness

regarding blood donation had donated before, compared to 54.2% with low level of awareness ($P= 0.13$, OR 1.4). For the participants with a positive attitude toward blood donation, the percentage of blood donation was 62.9%, compared to 37.1% for non-donors (P value = 0.005, OR 1.9).

The results indicated that the prevalence of blood donation was 58.2%. AlMutairi (2016) showed that 35.9% of participants were donors [2]. Alfouzan (2014) mentioned that 45.8% of the participants claimed that they have a history of blood donation [6]. Abolfotouh (2014) mentioned that 53.3% of participants had reported having previously donated blood [3]. Baig (2013), in his study, showed that only 19.02% of the participants were donors [7]. The differences could be attributed to different study populations, various sample sizes, and different cultural backgrounds.

The current study revealed that males donated blood more frequently (71.8%) compared to females (15.4%), and married individuals were more likely to donate blood compared to singles (62.3% versus 47.6%). These findings were consistent with other studies [2,6].

Regarding age and blood donation, this study found that age group of 30 years and above was more likely to donate blood (67.4%) as compared to participants in 18-29 years age group (48.9%). Similar findings were noted in another study by AlMutairi, which showed that the average age of donors was 31 ± 9.97 [2]. Alfouzan's study reported that 56.8% of individuals in the age group of 31–50 years had a history of blood donation compared to those under 20 years of age [6].

Regarding the level of education of participants, individuals with low educational achievement (secondary certificate and below) had more experience of blood donation compared to people with high educational achievement (65.2% versus 47.3%). Alfouzan's study showed that the frequency of blood donation was steadily increasing with the increase in the educational levels of the participants [6]. Regarding participants' professions, there was a statistically significant difference between military personnel (75.8%) and others (32.9%) in experience of blood donation. Similar findings were noted in Alfouzan's study [6].

About incentives for blood donation, various incentives and motivational factors for blood donation were mentioned by participants. The idea of one-day leave was supported by 86.8% of the responders. However, 55.3% of participants preferred no incentives. Almost 55.6% of them assumed that the media play an effective role in motivating people for blood donation and 85.2% reported that the presence of mobile blood donation caravans in public areas is a good motivational factor for donating blood, which is consistent with Alfouzan's study [6]. Nowadays, the visual media including television, radio broadcasting, social media (Facebook, Twitter, WhatsApp, YouTube, and others) can be used to create awareness among people about the continuous need for blood donation.

As per the current study, the blood donors who had donated blood voluntarily were 48.2%, which is similar to the findings of Alfouzan's study (55.6%) [6]. Of 58.2% of the

participants who had a history of blood donation, 28.6 had donated blood once, 36.4% had donated it 2-5 times, and 27.3% more than 5 times. However, 7.7% had a history of donating blood every year. This finding was also consistent with Alfouzan's study [6].

According to the findings of this study, nearly 92.1% of all participants will donate blood, if requested, in the future. Moreover, 96.8% reported that they encouraged their relatives and friends to donate blood, and the majority of blood donors (99%) mentioned that blood donation was a positive experience for them. These findings were similar to the findings of Alfouzan's study [6].

Several causes of not donating blood were reported by the participants in this study. The common reasons included "not thinking about it" (42.4%), "lack of time" (34.8%), and health problems (34.8%). AlMutairi's study mentioned that 34.3% of non-donating males had no specific reasons, while the most common reason for females was "no one asked them to donate" (29.9%) [2]. Alfouzan's study showed that 52.4% of the participants mentioned that blood donation did not cross their minds [6].

Almost 84.4% agreed that "blood banks screen the donated blood before transfusion" and 80.4% thought that some infectious diseases can transmit during blood donation. This percentage was 22% in Abolfotouh's study [3], 11.5% in Al-Drees's (2008) study [9] and 67% in Alfouzan's [6]. In this regard, the blood banks should clarify to people the policies regarding blood donation process and the precautions taken to prevent transmission of infection to the donor or the recipient.

The percentage of participants who had attended a course or symposium on blood donation was 24.6%. Further, 61.8% of the participants with high level of awareness regarding blood donation have donated blood before, compared to 54.2% with low level of awareness ($P= 0.13$). This result is consistent with AlMutairi's [2] and Alfouzan's findings [6]. Religion is an important issue in our society that affects behaviors and decisions. In this study, it was found that 62.7% of the participants believed that blood donation is a religious duty. AlMutairi's study [2] showed that 83.9% agreed that religion encouraged blood donation, Alfouzan's study [6] indicated that 71.3% strongly agreed or agreed with the idea that blood donation is a religious duty, and Abdel Gader's (2011) study found that 91% agreed that blood donation is a religious obligation [8]. In contrast to this, in other societies religion may become a barrier or have a negative impact on blood donation, as was reported in a Nigerian study that "the most common reason for non-donation and non-acceptance of blood transfusion was religious belief," particularly that of Jehovah's witnesses [11].

Altruism is one of the humanity values and morals that involves the willingness to do things to benefit others. In this study, almost 70.6% of participants believed that blood donation is an altruistic act. This finding was similar to the previous studies [3,5,6]. The present study found that 77.3% of the participants believed that blood donation is a national duty, and 83.9% agreed that it is a healthy habit, which is consistent with previous studies [3,6].

This study had several limitations. First, it was done in primary health care centers belonging to the National Guard hospital. Second, it would have been better to conduct the study in public areas (e.g., malls or public gardens), since some of the PHC visitors were patients with chronic diseases that prevented them from blood donation. Third, recall bias may have affected our results, as some of the questions depended on memory.

5. Conclusion

Generally, the level of awareness about blood donation is average and blood donation prevalence is still unsatisfactory. Participants who showed a high level of awareness about blood donation are more likely to donate. Married male population in the age group of 30 years and above, with low educational achievement and employed with military, is more likely to donate blood.

6. Future Scope

The media has a very crucial role to play in increasing the level awareness about blood donation among people, in addition to encouraging relevant educational programs in the community. Recruitment efforts and strategies should include adequate planning and attractive incentives. Further, careful and broad investigations are required in the future to identify the barriers to blood donation.

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8. Conflict of Interests

There are no conflicts of interest.

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Table 1: Demographic characteristics

Variable	Categories	#	%	
Age	18-29 yrs.	188	49.7%	
	30 and more	190	50.3%	
Gender	Male	287	75.9%	
	Female	91	24.1%	
Marital status	Married	273	72.7%	
	Single	105	27.8%	
Educational level	Illiterate	2	0.5%	
	Read & write	4	1.1%	
	Primary/Intermediate	40	10.6%	
	Secondary	184	48.7%	
University & more	University & more	148	39.2%	
	Job	Civil	40	10.6%
		House wife	42	11.1%
		Military	223	59%
		Student	51	13.5%
Unemployed		22	5.8%	
Blood group	A	74	19.6%	
	AB	17	4.5%	
	B	54	14.3%	
	O	165	43.7%	
	I don't know	68	18%	

Table 2: Knowledge and attitude for blood donation

A- Knowledge			
Knowledge questions	Right answer	Wrong answer	I don't know
People with which blood type are universal donors?	102 (27%)	40 (10.6%)	236 (62.4%)
What is the minimum age for blood donation?	146 (38.6%)	113 (29.9%)	119 (31.5%)
What is the minimum weight for blood donation?	160 (42.3%)	115 (30.4%)	103 (27.2%)
What is the minimum interval between two consecutive blood donations?	192 (50.8%)	100 (26.5%)	86 (22.8%)
Do you know the location of the blood bank in your community?	294 (77.8%)	84 (22.2%)	0 (0%)
Do you think that some infectious diseases can transmit during blood donation?	304 (80.4%)	31 (8.2%)	43 (11.4%)
Can diabetic or hypertensive patients donate blood?	202 (53.4%)	59 (15.6%)	117 (31%)
Do blood banks screen the donated blood before transfusion?	319 (84.4%)	9 (2.4%)	50 (13.2%)

B- Attitude					
Attitude questions	Strongly satisfied	Satisfied	Fair	Un satisfied	Strongly un satisfied
Do you think blood donation is an altruistic act?	121 (32%)	146 (38.6%)	51 (13.5%)	45 (11.9%)	15 (4%)
Do you think blood donation is a religious duty?	121 (32%)	116 (30.7%)	91 (24.1%)	42 (11.1%)	8 (2.1%)
Do you think blood donation is a national duty?	145 (38.4%)	147 (38.9%)	59 (15.6%)	24 (6.3%)	3 (0.8%)
Do you think blood donation is a healthy habit?	169 (44.7%)	148 (39.2%)	49 (13%)	9 (2.4%)	3 (0.8%)

Table 3: Practice and incentives

Variable	Categories	#	%
A) Practice of blood donation (n=378)			
Do you encourage your relatives and friends to donate blood?	Yes	366	96.8%
Did you attend any course or symposium on blood donation?	Yes	93	24.6%
Will you donate blood if asked in the future?	Yes	348	92.1%
Have you donated blood before?	Yes	220	58.2%
B) Experience of Blood donation (n=220)			
How many times have you donated blood?	One	63	28.6%
	2-5 times	80	36.4%
	> 5 times	60	27.3%
	Every year	17	7.7%
What was the reason for previous blood donation?	Voluntary	106	48.2%
	Family & friends	37	16.8%
	All causes	77	35%
How was your experience?	Positive	218	99%
C) Causes of not practicing Blood donation (n=158)			
Health problems		55	34.8%
Process is painful		17	10.8%
Fear of needles and blood donation		27	17.1%
Lack of time		55	34.8%
Did not think about it		67	42.4%
No need		15	9.5%
No access to blood donation centers		33	20.9%
D) Incentives (n=378)			
Do you think that the media are effective in encouraging people to donate blood?	Yes	210	55.6%
Do you think that to have mobile blood donation caravans in public areas is a good way to motivate people to donate blood?	Yes	322	85.2%
Do you think that one day off is a good incentive for donation?	Yes	328	86.8%
Which of these incentives is suitable for blood donation?	Money	61	16.1%
	Gifts	108	28.6%
	No incentives	209	55.3%

Table 4: Chi-square analysis

Variable	Categories	Blood donated (220)		No blood donation (158)		P value	OR
		#	%	#	%		
Age	18-29 yrs.	92	48.9%	96	51.1%	0.0001	0.46
	30 yrs. and above	128	67.4%	62	32.6%		
Gender	Male	206	71.8%	81	28.2%	0.0001	14.0
	Female	14	15.4%	77	84.6%		
Marital status	Married	170	62.3%	103	37.7%	0.01	1.8
	Single	50	47.6%	55	52.4%		
Educational level	Low	150	65.2%	80	34.8%	0.0001	2.1
	High	70	47.3%	78	52.7%		
Job	Military	169	75.8%	54	24.2%	0.0001	6.4

	Other	51	32.9%	104	67.1%		
Blood group	O group	104	63%	61	37%	0.05	1.2
	Other groups	85	58.6%	60	41.4%		--
	I don't know	31	45.6%	37	54.4%		0.59
Knowledge	High score	123	61.8%	76	38.2%	0.13	1.4
	Low score	97	54.2%	82	45.8%		
Attitude	High score	166	62.9%	98	37.1%	0.005	1.9
	Low score	54	47.4%	60	52.6%		