

# Knowledge, Attitude, Barriers and Motivators to Blood Donation among Primary Care Physicians in Al-Zaher Health Sector, MAKKAH 2015

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## ABSTRACT

**Background:** The initial step for achieving both positive attitudes of the population towards blood donation is to perform studies determining the current situation of knowledge, beliefs towards blood donation.

**Objective:** To estimate the level of knowledge regarding blood donation and its importance, determine positive and negative attitudes towards blood donation, explore the barriers that facing the individuals to donate blood and recommend motivational factors that can improve the donation process.

**Methodology:** Cross sectional study conducted among 90 primary care physicians in Al-zaher health sector in Makkah. Previous validated questionnaire was used in the study. Validity and reliability was calculated.

**Results:** Fifty percent had average level of knowledge, 32.5% had high level of knowledge and 17.5% had weak level of knowledge. 77.5% had high level of attitudes, 21.25% had average level of attitudes and 1.25% had weak level of attitudes. 56.25% have donated blood before while 43.75% have not. Regarding the barriers 17.14% had a health problem for not giving blood. 14.29% said donation procedure is painful. 22.86% had fear of needle or seeing blood. 42.86% said they had no time for donation. 37.14% said it did not cross their minds. 54.29% had difficulty in access to donation centers.

**Conclusion:** The main factors for not donating were difficulty in access to donation centers and lack of time married had better conceptions and attitudes towards blood donation than others and men and middle aged had the highest rates for donation. Introducing more facilities to public and improve knowledge to donation to be recommended.

**Keywords:** Blood Donation, Primary Health Care, Physicians, Knowledge, Attitudes.

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## INTRODUCTION

The Blood Transfusion Facility in 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.<sup>1</sup>

Recently, the source of blood has shifted dramatically from imported source to locally donors.<sup>1</sup> Currently, the sources of donated blood are involuntary donors (as a replacement for family, friend's needs), voluntary unpaid donors.<sup>2</sup>

Higher rates of blood transfusion-transmitted infections have been documented worldwide among involuntary donors.<sup>3,4</sup> According to WHO, donors who give blood voluntarily have lower prevalence of HIV, hepatitis and other blood-borne infection than people who donated for family members and payment.

The constant concern in the efforts to meet the demands for blood donation is the fact that only a small percentage of the eligible population actually chooses to donate blood on a regular basis and on unpaid system and that a significant percentage of eligible donors are delayed temporarily or permanently because of strict deferral criteria being continuously added in the name of blood safety.<sup>5</sup> The initial step for achieving both positive attitudes of the population towards blood donation is to perform studies determining the current situation of knowledge, beliefs towards blood donation. Increase awareness and encouraging positive attitude towards blood donation is the goal of all blood transfusion centers.<sup>6</sup>

Several studies have been published from developed<sup>7-10</sup> and developing<sup>11-14</sup> discovering the attitude and motivations of

voluntary blood donation. Because of difference in traditions, cultures, religion, and level of education, the attitudes and motivators are different. In Makkah, a lot of Muslims visit this holy city for hajj and Omrah make the possibilities of having disasters due to overcrowding and accidents are high. This make the need for recruiting blood donors is extremely important.

This study is intended to estimate the level of knowledge regarding blood donation and its importance, determine attitudes towards blood donation, explore the barriers that facing the individuals to donate blood and recommend motivational factors that can improve the donation process.

**SUBJECTS AND METHODS**

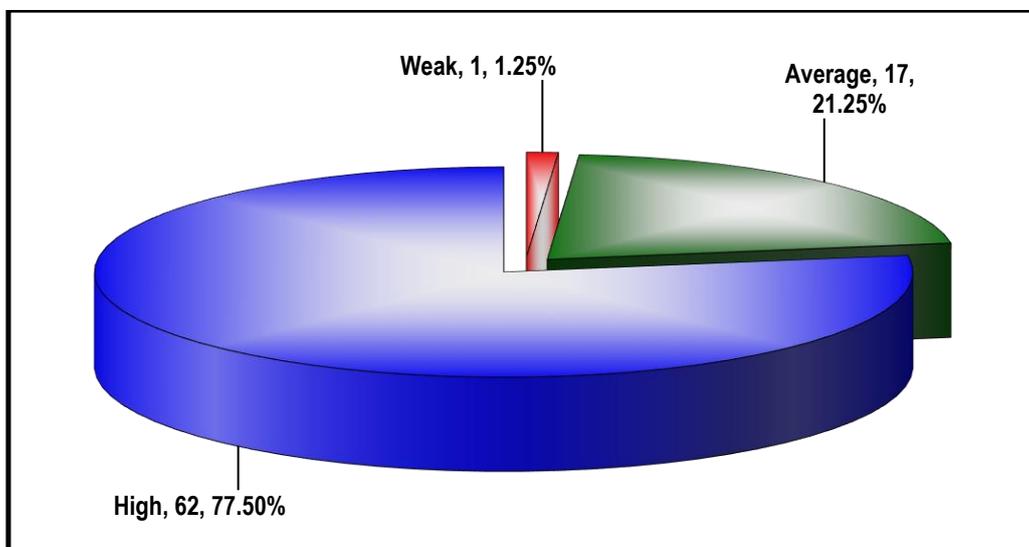
A cross sectional study was conducted in Makkah city, Saudi Arabia during a period of one month from 31st May 2015 to 27th June 2015. Makkah is the holy City of whole Muslims. It is located in the western region of KSA. In Makkah City, there are 3 sectors for primary care center administration and each sector has many primary care centers. Al-Zaher health sector has 15 primary care centers that deliver the primary care service for many neighborhoods in Makkah. The study included all primary care physicians male and females in Al-Zaher health sector.

A self-administered questionnaire was used for data collection. It has been used previously in Riyadh, Saudi Arabia.<sup>[15]</sup> Permission has been taken through email from primary investigator. The questionnaire-included questions covering 6 areas; demographic data, knowledge “9 questions”, attitude “4 questions”, practice “5 questions”, reasons for not donating and recommend motivation for donation.

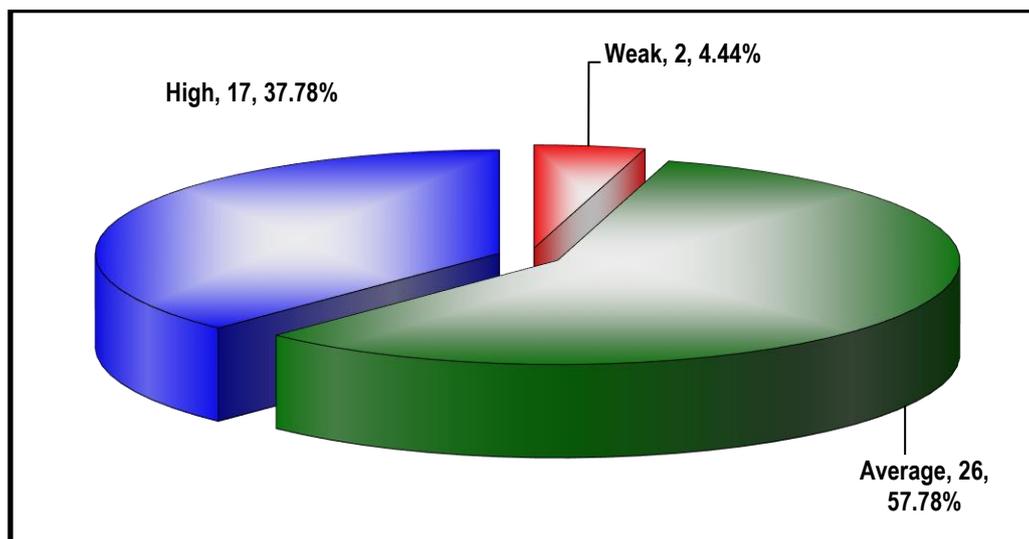
We have 9 points for knowledge for each point takes 0 (false) or 1 (true) so the total score is 9, the total score for attitude is 20 and the total score for practice is 11. Assessment of the level of knowledge, attitude and practice: weak < 50%, average 50% - 75% and high >75%. A pilot study will be conducted on first 10 primary care physicians to evaluate data collection tool and methodology of study and estimate the duration of questionnaire completion. Participants who included in the pilot study were excluded from the main study.

The research proposal was approved by primary health care center affairs and joint program of family medicine in Makkah. Participation in the study will be considered as consent.

All data were entered and analyzed using SPSS 19 with using Chi-square and t-tests. P-value less than 0.05 was considered statistically significant.



**Fig 1: Assessment of attitudes towards blood donation**



**Fig 2: Assessment of practices of blood donation**

## RESULTS

Eighty physicians participated in the study, 58.75% were male and 41.25% was female. 50% of them aged 30-40 years, 28.75% aged <30 years and 21.25% >40 years. The age ranged from 24 to 60 years. The mean±SD of age was 35.10±8.904. 46.25% had <5 years of experience, 27.5% had >10 years of experience and 26.25% had 5-10 years of experience. The years of experience ranged from 6 months to 38 years. The mean±SD of years of experience was 7.831±8.31. 48.75% had a bachelor degree, 26.25% had board certified, 17.5% had postgraduate diploma and 7.5% had other degrees 80% was married and 20 % was single.

When asking about knowledge of blood donation, 38.75% of them have blood group O, 28.75% of them have blood group B, 25% of them have blood group A and 7.5% of them have blood group AB. 66.25% of them knew that general donating blood group is O, 10% did not know, 10% said blood group AB, 7.5% said blood group B and 6.25 said blood group A. 43.75% said that minimum age for donation is 16 years, 38.75% did not know the minimum age for donation, 12.5% said that minimum age for donation is 25 years and 5% said that minimum age for donation is 10 years. 46.25% said that minimum weight for donation is 50Kg, 23.5% did not know the minimum weight for donation, 11.25% said that minimum weight for donation is 30Kg and 10% said that minimum weight for donation is 70 Kg. 50% said that minimum interval for donation is 2 months, 30% said that minimum interval for donation is 1 year, 18.75% did not know the minimum interval for donation and 1.25% said that minimum age for donation is 2 years. 60% knew the location of blood bank in their communities and 40% did not know. 61.25% did not think that blood donation could cause diseases such as HIV while 38.75% did think. 67.5 % said that diabetic and hypertensive patients can donate blood, 22.5% said that they cannot donate and 10% did not know. 83.75% said that blood bank screens blood before transfusion, 13.75% did not know and 2.5% said that blood bank does not screen blood before transfusion. On assessment of level of knowledge about blood donation among adults in this study, 50% had average level of knowledge, 32.5% had high level of knowledge and 17.5% had weak level of knowledge. Attitudes towards blood donation varied among adults in this study, upon asking if blood donation is part of altruism, % of agreement was 91.75%. Upon asking if blood

donation is religious duty, % of agreement was 77%. Upon asking if blood donation is national duty, % of agreement was 79.25%. Upon asking if blood donation is healthy habit, % of agreement was 82.75%. On assessment of attitudes towards blood donation among physicians in this study, 77.5% had high level of attitudes, 21.25% had average level of attitudes and 1.25% had weak level of attitudes. (Fig 1) When asking about practices of blood donation, 56.25% (n=45) have donated blood before; 44.44% donated 2-5 times, 35.56% donated once, 15.56% donated several times and 4.44% donated every year, 46.67% donated voluntary, 26.67% donated for relatives and friends' needs and 26.67% donated voluntary and for relatives and friends' needs. 93.33% had a positive experience while 6.67% had a negative experience. 88.89% would donate again if asked while 11.11% would not. 97.78% encourage relatives and friends to donate blood while 2.22% do not. On assessment of level of practices of blood donation among adults in this study, 58.70% had average level of practice, 36.96% had high level of practice and 4.35% had weak level of practice. (Fig 2)

While illustrating the barriers for donating among 35 adults that did not donate before, 17.14% had a health problem for not giving blood and 82.86% had not a health problem. 14.29% said donation procedure is painful while 85.71% said not painful. 22.86% had fear of needle or seeing blood while 77.14% did not have. 42.86% said they had no time for donation while 57.14% had time. 37.14% said it did not cross their minds while 62.86% did. Only 2.86% (n=1) believed that there is no need for donation while 97.14% did not believe. 54.29% had difficulty in access to donation centers while 45.71% did not have difficulty.

When asking about motivation for blood donation, 38.75% thought that media encourage people to donate blood while 61.25% did not think. 76.25% thought that mobile blood donation caravans in public areas (malls, plazas and streets) are a good motivational factor for donating blood while 23.75% did not think. 81.25% thought that one-day off is motivational factor for donation while 18.75% did not think. 51.25% said that free of charge is suitable motivation for donation, 40% said that taking gifts is suitable motivation and 8.75% said that paying money is suitable motivation for donation.

**Table 1: Relation between demographic data and knowledge about blood donation**

Demographic data		N	Knowledge			F or T	ANOVA or T-test	
			Mean	±	SD		Test value	P-value
Age	<30	23	6.000	±	1.348	F	1.584	0.212
	30-40	40	5.525	±	1.536			
	>40	17	6.176	±	1.185			
Gender	Male	47	5.702	±	1.502	T	-0.730	0.468
	Female	33	5.939	±	1.321			
Marital status	Single	16	5.750	±	1.612	T	-0.156	0.877
	Married	64	5.813	±	1.390			
Years of experience	<5	37	5.595	±	1.301	F	0.714	0.493
	5-10.	21	5.952	±	1.244			
	>10	22	6.000	±	1.773			
Level of education	Bachelor	39	6.026	±	1.513	F	1.649	0.185
	Postgraduate diploma	14	5.714	±	1.729			
	Board certified	21	5.762	±	1.044			
	Other	6	4.667	±	0.816			

Table 2: Relation between demographic data and practices of blood donation

Demographic data		N	Practices			F or T	ANOVA or T-test	
			Mean	±	SD		Test value	P-value
Age	<30	23	7.875	±	1.553	F	1.284	0.287
	30-40	40	7.480	±	2.104			
	>40	17	8.462	±	1.127			
Gender	Male	47	7.688	±	1.991	T	-0.784	0.437
	Female	33	8.143	±	1.292			
Marital status	Single	16	7.286	±	1.604	T	-0.858	0.396
	Married	64	7.923	±	1.841			
Years of experience	<5	37	7.905	±	1.261	F	1.047	0.360
	5-10.	21	7.182	±	2.714			
	>10	22	8.214	±	1.626			
Level of education	Bachelor	39	8.000	±	1.680	F	0.714	0.549
	Postgraduate diploma	14	7.778	±	0.667			
	Board certified	21	7.438	±	2.337			
	Other	6	9.000	±	1.732			

Table 3: Relation between demographic data and attitudes towards blood donation

Demographic data		N	Attitudes			F or T	ANOVA or T-test	
			Mean	±	SD		Test value	P-value
Age	<30	23	16.391	±	2.388	F	1.281	0.284
	30-40	40	16.275	±	2.439			
	>40	17	17.353	±	2.234			
Gender	Male	47	16.149	±	2.340	T	-1.757	0.083
	Female	33	17.091	±	2.390			
Marital status	Single	16	15.375	±	2.802	T	-2.228	0.029
	Married	64	16.828	±	2.208			
Years of experience	<5	37	15.973	±	1.848	F	2.144	0.124
	5-10.	21	17.238	±	3.048			
	>10	22	16.818	±	2.383			
Level of education	Bachelor	39	16.462	±	2.292	F	0.907	0.442
	Postgraduate diploma	14	16.429	±	2.441			
	Board certified	21	17.095	±	2.719			
	Other	6	15.333	±	1.506			

Table 4: Relation between demographic data and donating of blood before

		Have you donated blood before?						Chi-square	
		Yes		NO		Total		X <sup>2</sup>	P-value
		N	%	N	%	N	%		
Age	<30	8	17.8%	15	42.9%	23	28.8%	7.539	0.023
	30-40	24	53.3%	16	45.7%	40	50.0%		
	>40	13	28.9%	4	11.4%	17	21.3%		
Gender	Male	31	68.9%	16	45.7%	47	58.8%	4.379	0.036
	Female	14	31.1%	19	54.3%	33	41.3%		
Marital status	Single	7	15.6%	9	25.7%	16	20.0%	1.261	0.262
	Married	38	84.4%	26	74.3%	64	80.0%		
Years of experience	<5	21	46.7%	16	45.7%	37	46.3%	1.129	0.569
	5-10.	10	22.2%	11	31.4%	21	26.3%		
	>10	14	31.1%	8	22.9%	22	27.5%		
Level of education	Bachelor	18	40.0%	21	60.0%	39	48.8%	4.122	0.249
	Postgraduate diploma	9	20.0%	5	14.3%	14	17.5%		
	Board certified	15	33.3%	6	17.1%	21	26.3%		
	Other	3	6.7%	3	8.6%	6	7.5%		

There was no relation between demographic data and level of knowledge about blood donation as shown in table (1).

There was no relation between demographic data and level of practices of blood donation as shown in table (2). There was a negative relation (P-value = 0.029) between marital status and attitudes towards blood donation. There was no relation between attitudes towards blood donation and other demographic characteristics of physicians as illustrated in table (3).

There was a relation with statistically significance (P-value = 0.023) between age and donating blood before. There was a relation with statistically significance (P-value = 0.036) between gender and donating blood before. However, there was no association between blood donation and other demographic factors. Table (4)

## DISCUSSION

The Blood transfusion service in 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.<sup>1</sup> Recently, the source of blood has shifted dramatically from imported source to locally donors.<sup>1</sup> Currently, the sources of donated blood are involuntary donors (as a replacement for family, friend's needs), voluntary unpaid donors.<sup>2</sup> This study has been conducted in Makkah in order to estimate knowledge, attitude, barriers and motivators of blood donation among primary care physicians in Al-Zaher health sector, Makkah 2015.

In this study knowledge of blood donation, about 50% had average level of knowledge compared to Sabu study 2011 the overall knowledge on blood donation was good. Knowledge level was found highest among allied health science (53.1%) and lowest among pharmacy students (20.7%).<sup>14</sup> Salaudeen and Odeh 2001 published a study in Nigeria found two-thirds (61%) of total respondents had good knowledge of blood donation.<sup>16</sup>

Attitudes towards blood donation varied among adults in this study, 77.5% had high level of attitudes; about 91.75% reported it as part of altruism, 77% as religious duty, 79.25% as national duty and 82.75% as healthy habit while in Alfouzan study, most of the participants (78.6%) strongly agreed or agreed that blood donations part of altruism, 71.3% strongly agreed or agreed that blood donation is a religious duty, 74.2% strongly agreed or agreed that blood donation is a national duty, and 81.9% strongly agreed or agreed that blood donation is a healthy habit.<sup>15</sup> In Abdel Gader et al, 2011 study 90% of the respondents showed positive attitude toward bloods donations and its importance for patients care. Blood donors: 91% agree that that blood donation is a religious obligation.<sup>1</sup> Regarding practice, in this study 56.25% (n=45) claimed that they have donated blood before, about 44.44% donated 2-5 times, 46.67% donated voluntary, 26.67% donated for relatives and friends' needs and 26.67% donated for both. Benedict et al 2012 asses the practice among physicians in university of Benin 41.4% of participants have donated blood 56.9% donating less than once a year, 31% between 1-3 times a year and 8.6% more than thrice a year. 53.4% donated voluntarily while 39.7 donated for friends and relatives.<sup>[17]</sup> In Alfouzan study 45.8% has history of blood donation.<sup>15</sup>

In current study the main factors among non-donors 35 participants (43.75%) for not donating blood were difficulty in

access to donation centers 54.29% and lack of time 42.86%. The other reasons were 37.14% did not cross their minds, 22.86% had fear of needle or seeing blood, 17.14% had a health problem for not giving blood, 14.29% reported donation procedure as painful and only 2.86% (n=1) believed that there is no need for donation. In Abdel Gader et al, 2011; non-donors: 64% were not asked to give blood and those who were asked mentioned fear (5%) and lack of time (16%) as their main deterrents.<sup>1</sup> While in Alfouzan study, the main reported causes for not donating blood were blood donation not crossing their mind (52.4%), no time for donation (45%), and difficulty in accessing blood donation center (41.3%).<sup>15</sup> In this study, motivation for blood donation, 81.25% thought that one day off is motivational factor, 76.25% thought that mobile blood donation caravans in public areas (malls, plazas and streets) are a good motivational factor, 51.25% said that free of charge is suitable motivation, 40% said that taking gifts is suitable motivation, 38.75% thought that media encourage people to donate blood and 8.75% said that paying money is suitable motivation for donation while In Abdel Gader study et al, 2011; 75% objected to money compensation but 69% will accept token gifts and 92% will donate if a relative/friend needs blood.<sup>1</sup> While in Alfouzan, reported motivating factors for donating blood were one day off (81.4%), mobile blood donation caravans in public areas (79.1%), token gifts (31.5%), and finally paying money (18.9%).<sup>15</sup> In this study, males and middle aged had the highest rates for donation. While in Alfouzan, concluded that people in the age group 31–50 years, males, higher education and military were more likely to donate blood as well as people who showed higher knowledge level and positive attitude towards blood donation.<sup>15</sup> In conclusion, the main factors for not donating were difficulty in access to donation centers and lack of time. In the light of the present study results, we recommended increase level of knowledge about importance of donation, involving the media to encourage people for donation through media, lectures and social media, introducing more facilities to public to reach the donation centers and providing more blood donations caravans to public.

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