

Public Beliefs, Attitude and Practice of Voluntary Non-remunerated Blood Donation Among Resident in Sokoto, Nigeria

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Abstract: The practice of blood donation and transfusion is life saving and in spite of extensive researches, an ideal blood substitute is yet to be found, therefore man will continue to depend on blood donated from fellow humans. The aim of the study is to assess public belief, attitude to and practices of voluntary non-remunerated blood donation among resident in Sokoto metropolis. This is a population-based descriptive cross-sectional study. Multistage sampling technique was applied to select the respondents. An interviewer-administered questionnaire was used to collect data. Skewed quantitative variables were summarised using median and inter-quartile range and categorical variables using frequencies and percentages. Chi square test of association and binary logistic regression analysis were performed. Results were presented in simple tables the result shows that the respondents' median age was 25 years, with interquartile range (IQR) of 21-29 years. Almost all (99%) reported that blood donation is not contrary to their religious belief, and it was described as a form of service to humanity by 98%. Although a large proportion (95%) expressed appropriate beliefs and attitude to non-remunerated blood donation, only 25% of the respondents had ever donated. Respondents' gender ($X^2 = 26.96$, $df = 1$, $P < 0.001$), marital status (Fischer test=8.36, $P < 0.01$) and employment status (Fischer exact=13.77, $P < 0.006$) showed statistically significant relationship with blood donation practice, but none of these factors did predict practice of voluntary blood donation. In conclusion, although large proportion demonstrated appropriate belief and attitude to voluntary non-remunerated blood donation, few ever donated blood. There is need to sensitize general public on its benefit to improve practice among general public in the metropolis.

Keywords: Voluntary Blood Donation, Beliefs, Attitudes, Practices, Sokoto

1. Introduction

The practice of blood donation and transfusion is life saving and has enabled management of chronic ailments and conducting complex surgical procedures. Despite extensive researches, an ideal blood substitute has not been found and man is still dependent on blood donated from fellow humans [1].

Generally, donated blood come from either voluntary non-remunerated donors, commercial donors or family members. Unlike developed countries, developing countries significant

percentage of blood for transfusion depend largely on family replacement and paid blood donors [2]. Nigeria Federal Ministry of Health survey revealed that 25% of donated blood in public sector, is from commercial and 75% from family replacement donors while in private sector, 75% and 25% were commercial and family replacement donors respectively and voluntary donors were negligible in both sectors [3]. A study by Al-Drees et al also revealed that most of the blood donors are direct donors instead of volunteer donors, paid donors, or autologous donors while lot of

community members are non-donors [4].

Because of rise in life expectancy and implementation of new and sophisticated surgical and therapeutic methods requiring large amount of blood, demand for blood in most countries continues to increase [5]. Blood donation is widely described as an altruistic behaviour, and Healy et al identified the religious beliefs of donors as indicators of the altruistic behaviours [6].

2. Materials and Method

2.1. Study Area and Population

The study was conducted in Sokoto metropolis, which comprised of four Local Government Areas (LGA) with population size of 269,525 inhabitants. The residents are predominantly Muslims and largely Hausa/Fulani however there are other tribes in minority from other part of the country. All head of households, other residents aged 18 years and above who were willing to participate in the study and present at the time of data collection were included.

2.2. Study Design

A descriptive cross-sectional study design was used to assess public belief, attitudes and practices of non-remunerated voluntary blood donation among residents of Sokoto metropolis.

2.3. Sample Size Determination and Sampling Technique

A representative sample size of 271 was obtained using formula for descriptive study design [7], $n = Z^2_{\alpha} \times pq/d^2$ where n , is sample size; Z_{α} is standard normal deviate at alpha error corresponding to confidence value of 1.96; p is the proportion of factor of interest under study in the previous study and q is complimentary probability of p while d is level of precision set at alpha value of 5% (0.05). A multistage sampling technique was used to select the study respondents. In the first stage, two LGAs within the metropolis were selected using simple random sampling technique method (Balloting technique). In stage 2, three political wards each from the two selected LGAs were selected using simple random sampling technique (Balloting technique) and stage 3, five districts each from the selected political ward were selected using simple random sampling technique (Balloting technique). In the fourth stage, a required sample size for each selected district was allotted using probability proportional to size (PPS) based on the population distribution of the selected districts. At stage 5, houses, shops, offices and eating points were selected using a systematic sampling method. Where in the selected house, or shop or office, the eligible person refused to participate, the next sampling unit was selected.

2.4. Data Collection and Analysis

Research assistants used close-ended questionnaires to collect the data through interviews. The questionnaire was pre-tested on twenty volunteers from a district that was not part of the main study site. The data was analysed using

statistical package for social science (SPSS) version 20.0. The mean and standard deviation was calculated for the continuous data while the categorical data were expressed in frequency and percentages. The respondents' responses to questions on attitude were scored and graded at the end of data collection. Each appropriate response on respondents' attitude to blood donation was awarded 1 mark while zero (0) was awarded to inappropriate response. The respondents' attitude was graded as either positive or Negative. Aggregate scores of less than 50%; and equal to or greater than 50% were adjudged negative and positive attitudes respectively. At the end of scoring, the proportion of respondents with negative and positive attitude was determined. Chi square test of association was used to determine the association between respondents' socio-demographic characteristics and Belief, Attitude and Practice of blood donation. Binary logistic regression analysis was carried out to identify respondents' characteristics that were key determinants for their Attitude and Practice of voluntary blood donation.

2.5. Ethical Consideration

Ethical clearance was sought and obtained from the Research Ethics Committee of Sokoto state Ministry of Health. Permission to carry out the study was obtained from the Ministry for Local Government and Community Development and District Heads of selected districts. In addition, individual informed consent was obtained before the questionnaire was administered.

3. Results

Table 1. Socio Demographic Characteristics of the Study Respondents.

Variables	Number	Percentage
AGE GROUPS (YEARS)		
20-29	178	65.7
30-39	55	20.3
40-49	38	14.0
SEX		
Male	178	65.7
Female	93	34.3
MARITAL STATUS		
Married	190	70.4
Single	77	28.5
Widow	3	1.1
RELIGION		
Islam	225	94.1
Christianity	16	5.9
ETHNICITY		
Hausa	237	87.5
Yoruba	17	6.3
Igbo	6	2.2
Others	11	4.1
JOB STATUS		
Employed	39	14.4
Self-employed	31	11.4
Unemployed	7	2.6
Housewife	44	16.2
Student	150	55.4
OCCUPATION		
Formal sector	43	42.1
Informal sector	59	57.9

Table 1 shows median age to be 25 years, IQR 21 to 29. Majority 178 (65.7%) was aged between 20-29 years while those aged between 40-49 years were very few, 38 (14%). Most of the respondents were male 178 (65.7%) and female accounted for the remaining proportion. A large number 190

(70.4%) were married while the singles and widow accounted for 77 (28.5%) and 3 (1.1%) respectively. A large number 150 (55.4%) of respondents were student while the government employee accounted for 39 (14.4%).

Table 2. Awareness of Blood Donation Service CENTRE in Sokoto.

Variables	Frequency	Percentage
Are you aware of Walk-in blood donation centre in Sokoto		
Yes	143	53
No	126	46.7
If yes, where is the centre located in Sokoto		
Inside UDUTH	80	55.9
Inside Specialist Hospital	32	22.4
Epidemiology unit near Specialist hospital	31	21.7
Source of your information		
Radio	29	20.1
Newspaper	11	7.6
Friends	89	61.8
Relatives	12	8.3
Others	2	2.1

UDUTH= Usmanu Danfodiyo University Teaching Hospital.

Result in table 2 shows that majority (53.0%) of the respondents are aware that there is walk-in blood donation centre in Sokoto metropolis but only few of them (22%) correctly knew where the centre is located within the metropolis.

Table 3. Some Aspects of Respondents' Belief and Attitude to Voluntary Blood Donation.

Variables	Frequency	Percentage
Blood donation is contrary to my religious belief		
Yes	3	1.1
No	267	98.9
Blood donation is good		
Yes	266	98.2
No	5	1.8
Blood donation is a form of services to humanity		
Yes	263	97.8
No	6	2.2
Are you willing to give your blood to those in need		
Yes	252	93.0
No	19	7.0
Will you advice your friends, family members to donate blood		
Yes	257	94.8
No	14	5.2
Reasons for not willing to donate		
Fear	7	46.7
Religious beliefs	3	20
Others	5	33.3
Will you accept to be recruited for donation		
Yes	212	78.2
No	59	21.8
If yes, can you give us your contact		
Yes	206	96.3
No	8	3.7
Blood donation should be advertised to general public via media		
Yes	257	95.2
No	13	4.8

Table 3 shows that almost all the respondents' 267 (99%) reported that blood donation is not contrary to their religious belief, and that blood donation is good 266 (98%) and is a form of service to humanity 263 (98%). Two hundred and fifty two (93%) are willing to donate blood while those that are not willing mentioned fear of losing much blood and their religious as some of their reasons.

Respondents' attitude

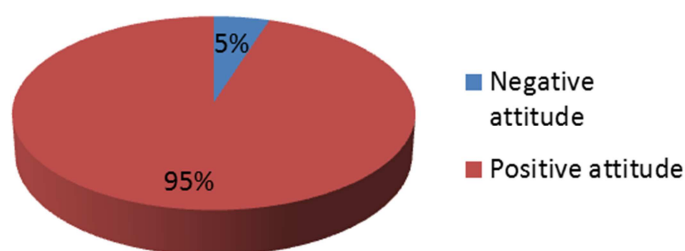


Figure 1. Respondents' Attitude to Voluntary Blood Donation.

Figure 1 result shows that a very large number 257 (95%) have positive (appropriate) attitude to voluntary blood donation and very little proportion reported inappropriate attitude.

Table 4. Practices of Voluntary Non-remunerated Blood Donation.

Variables	Frequency	Percentage
Have you ever donated your blood		
Yes	69	25.5
No	202	74.5
Do you have desire or intent to donate blood now and in future		
Yes	238	88.1
No	32	11.9
If ever donated, what was the circumstance of the donation		
Donated voluntarily	16	23.2
Donated for a friend/relative	48	69.6
Donate for money	5	7.2
Motivation for donation		
Serve humanity	44	68.7
To help my family	13	20.3
Others	9	14.5
Reasons For Not Ever Donated		
Not approached	158	44.8
None of my relatives need blood	154	43.6
No enough blood to donate	28	7.9
Fear of knowing my status	13	3.7

Table 4 result shows only small proportion of the respondents, 69 (25.5%) ever donated blood before but majority 238 (88.1%) have the desire to donate now and in the future. A large proportion of those that donated their blood 48 (69.6%) donated to friends and family members.

Table 5. Relationship Between Socio-demographic Characteristics and Respondents' Attitude to Voluntary Blood donation.

VARIABLES	Attitude to voluntary blood donation		Test statistic & p value
	Inappropriate, f (%)	Appropriate, f (%)	
Age group (years)			
20-29	4 (30.8)	174 (67.4)	Fischer exact test = 9.61 $P < 0.03$
30-39	5 (38.5)	50 (19.4)	
40-49	4 (30.8)	34 (13.2)	
SEX			
Male	9 (69.2)	169 (65.5)	LR=0.08, df=1 $P > 0.78$
Female	4 (30.8)	89 (34.5)	
MARITAL STATUS			
Single never married	6 (46.2)	71 (27.6)	Fischer exact test=2.1 $P=0.32$
Married	7 (53.8)	183 (71.2)	
Widow	0	3 (1.2)	
RELIGION			
Islam	10 (76.9)	245 (95.0)	LR=4.51, df=1 $P > 0.03$
Christianity	3 (23.1)	13 (5.0)	
ETHNICITY			
Hausa/Fulani	10 (76.9)	227 (88.0)	Fischer exact test=4.01 $P=0.19$

VARIABLES	Attitude to voluntary blood donation		Test statistic & p value
	Inappropriate, f (%)	Appropriate, f (%)	
Yoruba	1 (7.7)	16 (6.2)	
Ibo	1 (7.7)	5 (1.9)	
Others	1 (7.7)	10 (3.9)	
JOB STATUS			Fischer exact test=5.23 P= 0.20
Employed	5 (38.5)	34 (13.2)	
Self-employed	1 (7.7)	30 (11.6)	
Unemployed	0	7 (2.7)	
Housewife	2 (15.4)	42 (16.3)	
OCCUPATION			Fischer exact test=8.34 P=0.17
Formal sector	5 (38.5)	145 (56.2)	
Informal	6 (66.7)	37 (39.8)	
	3 (33.3)	51 (54.9)	

LR = likelihood ratio; f=frequency; % = Percent

Table 5 result of cross tabulation analysis using chi squared test to determine existence of relationship between socio-demographic characteristics and respondents' attitude to voluntary Blood donation, shows that only age (Fischer exact test=9.61, P=0.03) and religion LR=4.51, df=1 P> 0.03) were statistically significant. None of these variables did predict the respondents' attitude to voluntary blood donation.

Table 6. Relationship Between Socio-demographic Characteristics and Practice of Voluntary Blood Donation.

VARIABLES	Practice of voluntary blood donation		Test statistic & p value
	Yes, f (%)	No, f (%)	
Age group (years)			Fischer exact test=2.23 P = 0.70
20-29	54 (78.6)	150 (74.3)	
30-39	12 (17.4)	43 (21.3)	
40-49	3 (4.3)	9 (4.5)	X ² = 26.96, df = 1 P <0.0001
SEX			
Male	63 (91.1)	115 (56.9)	
Female	6 (8.9)	87 (43.1)	Fischer exact test=8.36 P < 0.01
MARITAL STATUS			
Married	11 (15.9)	66 (32.8)	
Single	56 (84.1)	132 (65.7)	LR = 1.73, df = 1 P > 0.19
Widow	0	3 (1.5)	
RELIGION			
Islam	67 (97.1)	188 (93.1)	Fischer exact test=2.08 P=0.58
Christianity	2 (2.9)	14 (6.9)	
ETHNICITY			
Hausa/Fulani	64 (92.8)	173 (85.6)	Fischer exact test=13.77 P <0.006
Yoruba	3 (4.3)	14 (6.9)	
Ibo	1 (1.4)	5 (2.5)	
Others	1 (1.4)	10 (5.0)	Fischer exact test=2.75 P=0.90
JOB STATUS			
Employed	14 (20.3)	25 (12.4)	
Self-employed	11 (15.9)	20 (9.9)	
Unemployed	1 (1.4)	6 (3.0)	
Housewife	3 (4.3)	43 (20.3)	LR=2.85, df=1 P > 0.09
Student	40 (58.0)	110 (54.5)	
OCCUPATION			
Formal sector	15 (42.8)	30 (41.8)	
Informal sector	20 (57.2)	39 (58.2)	
ATTITUDE			
Inappropriate	1 (1.4)	12 (5.9)	
Appropriate	68 (98.6)	190 (94.1)	

f=frequency; %= Percent.

Table 6 result of chi squared analysis shows that sex (X² = 26.96, df = 1, P <0.000), marital status (Fischer exact test=8.36, P = 0.01) and respondents' job status (Fischer exact test=13.77, P=0.006) were statistically significant to Practice of Voluntary Blood Donation. Logistic regression analysis did show that none of the respondents' socio-demographic variables did significantly predict whether the

respondents would donate blood voluntarily or not.

4. Discussion

This study primarily focused on public belief, attitude and practice towards voluntary, unremunerated blood donation. The World Health Organization introduced the 100% unpaid,

voluntary blood donation policy in 1997. World Blood Donor Day was established at the 58th World Health Assembly in May 2005 by WHO's 192 Member States, to urge all countries in the to thank blood donors, promote voluntary, unpaid blood donations and ensure safe supplies of blood for all. As many countries have reached 100% unpaid voluntary blood donation, only 17 developing countries made the list [8].

This study showed that a majority of the respondents thought that blood donation was good and not contrary to their belief. This is also reflected in findings in a study in Benin city [9]. The obstacle of belief being a barrier to blood donation can therefore be said to be removed paving the way for more sensitization on blood donation.

Although majority of the respondents had positive attitude towards blood donation, the practice of voluntary blood donation was abysmal. Most of the respondents were within the age range of donation but only 25% ever donated blood, which is just 3% above what was reported in a study in Benin city where only 22.1% did so [8] and in Gujarat, India where only 39% ever donated voluntary [10]. Of those that donated, majority donated for relatives while very few did so voluntarily. This raises concern for the availability of life saving blood in times of emergency and the fact that the safest blood donors are found among people who donate their blood voluntarily as the risk of transfusion transmissible diseases is highest with the blood procured from remunerated donors [11-13]. Studies in Pakistan and Peshawar also found that majority of the donors did so for families while only few donated blood voluntarily [14, 15]. In this study, more than three quarters of the respondents accepted to be recruited for donation and a majority of them gave their contacts. This is encouraging and shows a high level of commitment to their acceptance to providing sufficient blood to our teaming populace. This is contrary to findings in a study in Benin City Nigeria where very few of the respondents accepted to be recruited for blood donation and even fewer gave their contacts afterwards [9]. The major reason given by those who had never donated was that they had never been approached. This underscores the need for mass sensitization to encourage the populace to voluntarily donate blood at the blood banks. Studies in Benin city and Peshawar also cited similar reasons for not donating [9, 15].

There was a significant relationship between gender and blood donation practice. Males in our society were found to be more likely to donate blood compared to the women. This is not surprising as women are deterred by physiological conditions such as pregnancy and menstruation limiting their chances to donate blood. This concurs with the WHO report 2011 that there are more male donors in Nigeria [16]. Similar studies in Saudi Arabia and India also showed that most of the donors were males [17, 18]. This buttresses the need for more enlightenment on blood donation for the female populace as being a female should not be a limiting factor to blood donation.

5. Conclusion

In conclusion, the study found that a large proportion of

the respondents expressed positive attitude and beliefs to blood donation. In spite of good awareness, positive attitude and beliefs to blood donation, the practice of voluntary blood donation is still low as less than one third had ever donated. A significant proportion of the respondents expressed willingness and intent to donate now and in the near future. Respondents' gender, marital status and job status showed statistically significant association with voluntary blood donation but none did predict the donation behaviour and practice.

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Authors' Contribution

AUK: is the lead researcher, conceptualized the study and design

AUM and GSJ: Did the entire data analysis and interpretation of the result

NCO: Wrote the discussion and conclusion aspect of the article

MOR: Wrote the introduction and abstract

UMA: Coordinated field data collection and entry into computer statistical software

Conflict of Interest

All authors do not have any possible conflict of interest.

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