

A cross-sectional survey of the willingness of tertiary hospital staff to donate blood in Sagamu, Nigeria

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Abstract

Background: Available donor blood rarely meets the demand in sub-Saharan Africa due to obstacles to blood donation. Willingness to donate blood is adjudged an important step to the actual practice of donating blood.

Objective: To assess the willingness of the members of staff of the hospital to donate blood and determine factors affecting their willingness or otherwise.

Methods: This was a descriptive cross-sectional study. A proportional allocation of participants was carried out at the various departments in the hospital using self-administered questionnaire.

Results: Overall, 183 (73%) of the 246 respondents expressed willingness to donate blood, 111(45%) of whom have been asked to donate blood in the past. Only 91(37%) had donated blood in the past. Significantly higher proportion of health staff showed the willingness to donate blood generally and voluntarily compared to non-health staff. Significantly higher proportion of respondents with tertiary education showed the willingness to donate blood. Two hundred and eighteen (88.8%) were willing to donate blood to help the patient in need while fear of exposure to HIV infection, needle prick and dizziness constituted the major factors discouraging blood donation (19.9%, 18.7% and 18.3% respectively).

Conclusion: Willingness to donate blood was mostly based on the primordial motivation of helping the patient in need which does not translate to blood donation. There is a need to improve awareness and advocacy on blood donation among hospital staff and the general population.

Keywords: Blood donation, Healthcare providers, Hospital staff, Willingness, Sub-Saharan Africa

Introduction

Blood is frequently required for life-saving purposes in many medical conditions as there is no valid alternative when the need for transfusion arises apart from donor blood

from the human source.^[1] Therefore, blood donation is an important process that every health care facility should make appropriate plans for in readiness for emergencies. Blood donors are categorized into voluntary non-remunerated, family replacement, and remunerated or paid donors.^[2]

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Due to the higher likelihood of increased incidence of transfusion transmissible infections from paid donors, the National Blood Donation Policy advocates for blood donation from voluntary donors only, in concordance with the World Health Organization Blood Donation Policy.^[3, 4] This policy could lead to severe

shortage of blood storage in the blood banks as a result of the low level of such voluntary blood donation arising from lack of education and high level of poverty.^[5, 6] The challenge of providing donor blood is further heightened by the increasing prevalence in the number of trauma patients from civil conflicts, wars, road traffic injuries, more advanced surgical techniques, and new modalities of cancer treatment.^[7] This is more disturbing in sub-Saharan Africa where illiteracy, poverty and negative cultural beliefs remain obstacles to blood donation.^[8]

Studies have identified that the major reason behind donors' willingness to donate blood is the awareness of blood needs among patients.^[9-12] It is safe to assume that individuals working in the hospital setting should be aware of the need for blood donation among patients than the general public. Few studies have been conducted to assess the willingness of hospital staff to donate blood for clinical use. Besides, there has been no previous survey of the willingness of hospital staff to donate blood at the site of this study. Therefore the aim of this study was to assess the willingness of the members of staff of the hospital to donate blood as well as determine some of the factors which may affect the actualization of their willingness or otherwise.

Methods

This cross-sectional survey was carried out at the Olabisi Onabanjo University Teaching Hospital (OOUTH) Sagamu, Ogun State, Nigeria between January and March 2015. The study population was the staff of the hospital.

A minimum sample size of 246 was calculated using Fisher's formula for a descriptive survey for a population less than 10,000. Using the current hospital staff directory a proportional allocation of participants was carried out using the formula below:

Staff population in department/ Total number of hospital staff × Calculated sample size.

In order to compensate for non-response, 20% of the calculated sample size estimate was added to make the final sample estimate. Every staff willing to participate in the study was subjected

to balloting until the allocated number for each work category was complete.

Ethical approval for the study was obtained from hospital ethical committee (OOUTH/DA. 326/489). The recruited hospital staff gave written consent and filled a pre-tested self-administrable questionnaire. The structured questionnaire consisted of two sections: a section for socio-demographic data of the respondents and the second section for responses to specific questions on the subject matter of willingness to donate blood.

The respondents were categorised into two groups: Health staff (comprising doctors, nurses and laboratory staff) and Non-Health staff (comprising account and finance officers, administrative officers, caterers, health information staff, laundry staff, security agents and social welfare workers) based on their level and extent of contact with the patient. The health workers are directly involved in the medical management of hospital patients while the non-health staff carry out support services which do not require direct involvement in patient management. Statistical analysis of the data was carried out using SPSS version 17 and the data were presented as proportions and percentages. Chi-Square test was used to determine the association between categorical variables. The statistical tests were two-tailed and were done at 5% level of significance.

Results

Socio-demographic profile of the respondents

A total of 246 hospital staff aged 20 years to 60 years were surveyed. The mean age of the subjects was 42 ± 8.4 years. One hundred and eleven (45.1%) of the respondents were aged between 40-49 years. There were 176 (69.1%) females with a male to female ratio of 1:2.2; 213 (86.6%) were married, 228 (92.7%) had tertiary education and 220 (89.4%) were Christians. There were 155 (63.0%) health staff as shown in Table I.

Response of hospital staff to invitation towards blood donation

Overall, 183 (73%) of the respondents expressed the willingness to donate blood. A higher proportion of health staff (127; 83%) showed the willingness to donate blood than the non-health staff (56/91; 60.9%) and the difference was statistically significant ($p < 0.001$). Sixty-five (43%) of health staff were willing to donate blood voluntarily, which differ significantly from non-health staff (20/91; 21.7%) ($p = 0.001$). The proportions of health staff who had ever been invited to donate blood, willing to donate blood to known persons and those that have donated blood in the past did not differ from the proportions of the non-health staff as shown in Table II ($p = 0.280, 0.100$ and 0.089 respectively).

Influence of socio-demographic characteristics on the willingness to donate blood

A higher proportion of respondents with tertiary education showed the willingness to donate blood compared with secondary and primary education ($p = 0.003$). Age, sex and religion of the respondents did not significantly influence willingness to donate blood (Table III).

Factors encouraging blood donation

Table IV shows that most of the respondents (88.6%) were willing to donate blood out of the desire to help the needy, particularly for patients who were known to them. On the other hand, monetary gain and other gifts were the reasons for the willingness to donate blood among 2.8% and 2.4% respectively.

Factors discouraging blood donation

The fear of exposure to HIV infection, needle prick and post-bleeding dizziness were the leading factors (19.9%, 18.7% and 18.3% respectively) discouraging the respondents from voluntarily donating blood. Very few people avoid blood donation out of cultural (0.4%) or religious (3.6%) considerations as shown in Table V.

Table I: Socio-demographic characteristics of the respondents

Variables	Frequencies	Percentages
Age(years)		
20-29	17	6.9
30-39	71	28.9
40-49	111	45.1
50	47	19.1
Sex		
Male	76	30.9
Female	176	69.1
Marital Status		
Single	24	9.8
Married	213	86.6
Divorced	4	1.6
Widowed	5	2.0
Education		
Primary	2	0.8
Secondary	16	6.5
Tertiary	228	92.7
Religion		
Christianity	220	89.4
Islam	24	9.8
Others	2	0.8

Discussion

Willingness to donate blood is adjudged a critical step towards blood donation. In the present study, the majority of the respondents expressed willingness to donate blood, but poor blood donation practice was observed as only 37% had ever donated. This finding agreed with the previous reports by Mullah *et al.* and Bantayehu *et al.* which showed that about 39% and 32% respectively of the health care providers in India and Ethiopia had donated blood.^[13,14]

The findings of the present study would suggest that greater willingness to donate blood did not translate to actual blood donation. The disconnect between readiness and the act of blood donation might be because the respondents have not been approached for blood donation.

Table II: Frequencies and circumstances of blood donation among the respondents

Category of Staff	Staff Department	N (%)	IDB (%)	GWD (%)	WDBK (%)	WDBV (%)	PBD (%)
Health Staff	Medical	31 (12.6)	23 (74)	25 (81)	10 (31)	18 (58)	18 (58)
	Nursing	103 (41.9)	29 (28)	83 (81)	23 (22)	34 (33)	22 (21)
	Laboratory	21 (8.5)	15 (71)	20 (95)	6 (28)	15 (71)	13 (62)
	Subtotal	155 (63)	67 (43)	127 (83)	37 (24.2)	65 (43)	52 (34)
Non-Health Staff	Accounts	18 (6.5)	11 (60)	13 (72)	9 (50)	3 (17)	12 (67)
	Admin	28 (11.4)	9 (32)	18 (64)	7 (25)	10 (36)	7 (25)
	Catering	8 (3.3)	3 (38)	2 (25)	3 (38)	1 (13)	6 (75)
	Health Information	14 (5.7)	6 (43)	9 (64)	4 (28)	1 (7)	5 (36)
	Laundry/Tailor	5 (2.0)	3 (60)	1 (20)	(0)	0 (0)	1 (20)
	Security	11(4.5)	8 (73)	7 (64)	2 (18)	4 (36)	8 (73)
	Social Welfare	7 (2.8)	4 (57)	6 (86)	4 (57)	10 (14)	4 (57)
	Subtotal	91 (37)	44 (48)	56 (60.9)	30 (32.6)	20 (21.7)	40 (43.5)
	Total		246 (100)	111 (45)	183 (73)	67 (28)	85 (35)
**P-value			0.280	<0.001	0.100	0.001	0.089

*Only responses in the affirmative were reported.

**Compares the subtotal of health staff and nonhealth staff responses towards blood donation.

IDB- Invitation to donate blood GWD-General willingness to donate blood

WDBKP- Willingness to donate to known person WDBV-Willingness to donate blood voluntarily

PBD- Past blood donation

This would be an attractive hypothesis as the proportion that had donated blood (45%) closely approximated the proportion that has been invited to donate blood (37%) rather than those who only expressed willingness (73%). This is also corroborated by previous studies among various groups.^[15-17]

The majority of the nurses (most of whom were females) expressed willingness, but only a small proportion had been invited to donate blood. This hesitation may be due to the erroneous impression that women are not preferred as donors as documented in other studies.^[18-20] The health staff were more willing to donate blood generally and voluntarily compared with non-health staff. This might be explained by their professional knowledge of the physiology of blood requirements and the awareness of the need to have an efficient blood bank system. Advance level of education was a factor that was significantly associated with the willingness to

donate blood among the hospital staff. This may be due to a better understanding of the harmlessness in blood donation with a higher level of education status. This observation was similar to the finding of Pule *et al.* in Botswana populace.^[21]

Table III: The influence of socio-demographic characteristics on willingness to donate blood

Variables	Willingness to donate		P values
	Yes (n=183)	No (n= 63)	
Age (years)			
20-29	14 (82.4)	3 (17.6)	0.146
30-39	56 (78.9)	15 (21.1)	
40-49	84 (75)	27 (24.3)	
≥	29 (61.7)	18 (38.3)	
Sex			
Male	58 (76.3)	18 (23.7)	0.384
Female	125 (73.3)	45 (26.5)	
Education			
Primary	0 (0)	2 (100)	0.003
Secondary	8 (50)	8 (50)	
Tertiary	175 (76.8)	53 (23.2)	
Religion			
Christianity	163 (74.1)	57 (25.9)	0.631
Islam	19 (79.2)	5 (20.8)	
Others	1 (50)	1 (50)	

Table IV: Reasons for willingness to voluntarily donate blood

Reasons	Frequency	Percentages
Desire to help	218	88.6
Monetary gain	7	2.8
Receipt of gift	6	2.4
To know genotype/blood group	47	19.1
To know HIV status	70	28.5
To get health counsel	78	31.7

*Multiple responses were allowed

The majority of the respondents (88.8%) were motivated to donate blood out of the desire to help, especially when a prospective recipient is a known person. This is shown by close approximation in the percentages of those that

Table V: Reasons for non-willingness to voluntarily donate blood

Reasons	Frequency	Percentages
Culture	1	0.4
Religion	9	3.6
Fear of needle	46	18.7
Fear of exposure to HIV infection	45	19.9
Fear of knowing HIV status	13	5.3
Fear of dizziness or fainting	45	18.3
Insufficient blood	26	10.6
On treatment for chronic illness	4	1.6

*Multiple responses were allowed

showed the willingness to donate blood to known persons (28%) and donate blood voluntarily (35%). This observation was similar to the findings reported by and Al-Dress among Saudi population and Marautidou *et al.* in Greece hospital blood banks where 84.5% and 85.1% of the respondents showed interest in donating blood for relatives or friends respectively.^[7,22]

Ideally, donating blood is an important act of altruism and should not have to be reinforced by rewards or gratification.^[23] However, since the volume of voluntary donations is generally insufficient, it has become a sustainable practice to rely on rewarded donations.^[24, 25] In general, rewards should not be related to material possessions (e.g. monetary compensation), so that there is no conflict with ethical values and individuals are not tempted to be less than honest during the pre-donation screening in order to obtain rewards.^[26] In Nigeria, the National Blood Transfusion service makes effort to retain its voluntary donors by giving incentives such as free blood tests (blood group, hemoglobin genotype, HIV/ hepatitis screening) to donors, allowing the immediate family of volunteers to benefit from donor blood without replacement and giving gift items such as certificates, clothes, haematinics, refreshments and recognition badges.^[27] Getting health counsel, free HIV testing, blood group and genotype testing are some of the incentives that may improve willingness to donate blood as observed in the present study. This observation was similar to the findings in other studies.^[28, 29] A small percentage (28%) of the respondents

showed the willingness to donate blood because of monetary gains (2.8%) and opportunity to receive gifts (2.4%). This practice showed that less value is placed on gratification-induced blood donation among hospital staff unlike the reports from a study conducted among patients' relatives in Ebonyi State, Nigeria where 50% of the respondents would consider donating blood if there would be a financial reward.^[8]

Various studies have shown that fear was the principal reason discouraging respondents from blood donation.^[9, 12] The fear of exposure to HIV infection was the reason given by 19.9% of the respondents for not willing to donate blood. This showed the persistence of some wrong perceptions about the modes of transmission of HIV infection. The same finding was reported in Central Saudi Arabia where 22% of the donors were afraid of being infected with HIV.^[30] Frequent education of the general populace on the mode of transmission of HIV is imperative to improving blood donor recruitment. Besides, the fear of post-bleeding dizziness also discouraged some of the respondents from donation similar to the finding in a Mexican where blood donation was mainly deterred by the fear of getting dizzy or fainting following blood donation.^[31] The fear of pain from needle prick also constituted a major factor discouraging blood donation among the study participants. This observation agreed with the findings among Swedish blood donors where reluctance was mostly due to the fear of the needle.^[32] In the present study, more people avoided blood donation out of fear than out of treatment for chronic illness or cultural or religious considerations similar to the findings in some previous studies.^[7,12]

Conclusion

The willingness to donate blood is mostly based on the primordial motivation of helping a patient in need, particularly known patients. This does not translate to actual blood donation. This observation suggests ineffectiveness of the current local and national blood donor drive. There is a need to improve awareness and advocacy concerning blood donation among health workers and the general population to

have a pool of eligible voluntary blood donors. Advocacy should be geared towards removing the bias against the invitation of women to donate blood.

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