

# Knowledge and behavior towards voluntary blood donation among students of a tertiary institution in Nigeria

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## Abstract

**Background:** Blood donation is the only way of acquiring blood to meet emergency requirements in cases of road traffic accidents, complications of pregnancy and childbirth, various anemic disorders and surgical emergencies among others. Globally, 80 million units of blood are donated each year, but only two million units are donated in sub-Saharan Africa where the need is enormous. The objective of this study was to determine the behavior of the students of a tertiary institution in Nigeria towards voluntary blood donation.

**Materials and Methods:** This is a descriptive cross-sectional study, which involved students of a tertiary institution in Nigeria. A multistage sampling technique was employed in selecting the participants for this study. A semi-structured self-administered questionnaire was used to collect information on socio-demographic characteristics, knowledge, attitude and factors affecting voluntary blood donation. The data obtained were analyzed using EPI-INFO 2005 software Version 3.3.2.

**Results:** Less than two-thirds (61%) of total respondents had good knowledge of blood donation. More than three quarters (85%) of the respondents had never donated blood. Of the 15% that had donated, only 3% donated voluntarily. Among those that had ever donated, males (57%) were more than females. Many of the donors donated for relatives (57%). The majority of the respondents were compelled to donate because of emergency situations (75%). The reasons why many did not donate were lack of opportunity (45%) due to tight lecture schedule and inadequate knowledge (24%). Gift items such as hematinics, T-shirts and wrist bands (29%) would motivate respondents to donate.

**Conclusion:** The Students' Union body and other Organizations in the University should include a blood donation drive in their monthly/annual activities. The University authorities, the University health service centre and the Hematology Department of the Teaching hospital should collaborate in promoting voluntary blood donation among the students.

**Key words:** Behavior, knowledge, Nigeria, students, voluntary blood donation

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## Introduction

Blood is the most donated tissue in medical practice and a veritable tool in many live-saving situations when used judiciously. In spite of the rapid and remarkable conquest and breakthrough of medical science today, there is still no ideal substitute. Blood is only manufactured by human

beings and human donation is the only way of acquiring blood to meet emergency requirements in cases of road traffic accidents, complications of pregnancy and childbirth, various anemic disorders and surgical emergencies among others. Blood donation is the act of giving one's blood so it can be transfused into another for therapy. It is safe and

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advantageous to the donor, recipient, community and the blood transfusion service. Globally, 80 million units of blood are donated each year but only two million units are donated in sub-Saharan Africa where the need is enormous.<sup>[1]</sup> In Nigeria, although half of the population in the country is medically fit for donation, only four in a thousand are voluntary blood donors.<sup>[2]</sup>

Since infectious diseases can be transmitted through blood transfusion, there is need to source blood from a low-risk population. The first step towards blood safety is to encourage voluntary, non-remunerated and regular blood donors who will donate blood at least once or three times a year. The National policy on blood advocates that blood donation should be solely voluntary and that donors should not be moribund.<sup>[3]</sup> Little wonder many nations across the world are continually evaluating their blood donor strategies in the light of the current demand for blood and its products and in some cases, the reduction of the available eligible donors due to the stringent criteria in place to ensure blood safety.<sup>[4]</sup>

This study was designed to determine the behavior of the students of a tertiary institution in Nigeria towards voluntary blood donation by investigating their knowledge, attitude, blood donation practices, factors influencing voluntary blood donation and their willingness to donate blood voluntarily.

## Materials and Methods

This is a cross-sectional study which involved 400 participants among the students of the University of Ilorin, Ilorin, Nigeria. A multistage sampling technique was employed in selecting the participants for this study. Simple random sampling using balloting method was used to select two faculties; the faculties of Science and Arts were chosen. In the second stage, simple random technique using simple balloting method was used again to select two departments from the chosen faculties. The departments of Microbiology and Biochemistry were selected from the faculty of Science while the departments of Performing Arts and Religious Studies were selected from the faculty of Arts.

The number of respondents was proportionately allocated to the departments and to the study levels of the students. The sampling frame was obtained from the Heads of departments. Systemic sampling technique was then used to select respondents. The respondents not available during the survey were replaced by the next person in the sampling frame.

A semi-structured self-administered questionnaire was used to collect information on socio-demographic characteristics, knowledge, attitude and factors affecting voluntary blood

donation. The questionnaires were pretested and verified for errors. The questionnaires were analyzed using the EPI-INFO software.

## Results

The age of the respondents ranged between 17 and 30 years. The mean age was  $22 \pm 2.4$  (SD) years. There were 52.5% males and 47.5% females; Yoruba constituted the major ethnic group (307, 76.7%) in the study population [Table 1].

Less than two-thirds (64.8%) of the respondents had good knowledge about blood donation. About one quarter (25.8%) had poor knowledge on what blood donation entails. One hundred and ninety (47.5%) respondents had poor knowledge about the health conditions that would require blood transfusion, only 43.0% could state correctly some of the health conditions: anemia, trauma, road traffic accidents, sickle cell anemia and surgery were the health conditions mentioned by the respondents [Table 2]. The majority of the respondents agreed that blood donation can save lives (380, 95.0%) and should be done for free (334, 83.5%). More than two-thirds (335, 83.5%) said they can donate blood voluntarily.

More than three quarters (339, 84.7%) of the respondents had never donated blood, only few of the respondents (61, 15.3%) had ever donated blood. Among those that had ever donated, males (57.4%) were more than females (42.6%). More than half (35, 57.4%) of blood donated by the study population was for relations and 15 (24.6%) donated for friends. Of the total respondents, very few (11, 0.3%)

**Table 1: Socio-demographic variables of the respondents total (N=400)**

Variables	Frequency	(%)
Age		
<19	13	3.3
19-21	146	36.5
22-24	159	39.7
25-27	76	19.0
28-30	06	1.5
Total	400	100.0
Gender		
Female	190	47.5
Male	210	52.5
Ethnic group		
Hausa	33	8.3
Ibo/Igbo	30	7.5
Yoruba	307	76.7
Others	30	7.5
Religion		
Christianity	283	70.8
Islam	116	29.0
Others	1	0.2

**Table 2: Knowledge of the respondents on blood donation (N=400)**

Variable	Frequency	(%)
What is blood donation?		
Good	259	64.8
Fair	63	15.8
Poor	78	19.4
Can males and females donate?		
Yes	386	96.5
No	14	3.5
How often can one donate in a year?		
Once	60	15.0
Twice	128	32.0
Three times	50	12.5
Four times	41	10.3
No idea	121	30.2
What volume of blood donation		
Good	309	77.3
Fair	26	6.5
Poor	75	16.3
Health conditions that need blood transfusion		
Good	172	43.0
Fair	38	9.5
Poor	190	46.8
Any health problem to donor		
Yes	150	37.5
No	250	62.5

had voluntarily donated blood. The majority of the study population were compelled to donate as evidenced by the finding that 46 (75.4%) donated for emergency situations, four (6.6%) donated to replace blood units borrowed from the blood bank while 18.0% of ever donated were altruistic [Table 3].

The reasons why many did not donate were lack of opportunity (154, 45.4%) due to tight lecture schedule and inadequate knowledge (82, 24.1%) about the process and importance of blood donation. Also, the fear (35, 10.3%) that the process is harmful deterred respondents while 19 (5.6%) claimed they were not physically fit to donate blood [Table 3].

Inadequate information about blood donation and its benefits (50.5%), fear of fainting (41.0%) and the perception that it exposes one to HIV/Hepatitis (49.8%) were the main inhibitors towards voluntary blood donation mentioned by the respondents. A few of the respondents felt it results in weight loss (92, 23.3%), while one-third (33.5%) said the donor would feel weak after the procedure [Table 4]. More than two-thirds (70.5%) of the respondents mentioned that adequate information and the knowledge that a unit of blood donated will save life (73.2%) would motivate them to be voluntary donors. Also, gift items

**Table 3: Blood donation practices among the respondents**

Variable	Frequency	(%)
Ever donated blood		
No	339	(84.7)
Yes	61	(15.3)
Total	400	(100.0)
Ever donated by gender (N=61)		
Male	35	(57.4)
Female	26	(42.6)
Types of blood donation (N= 400)		
Voluntary	11	(2.8)
Non-voluntary	50	(12.5)
Non-donor	339	(84.7)
Recipients of blood donation		
Friends	15	(24.6)
Relations	35	(57.4)
Unknown persons	11	(18.0)
Total	61	(100.0)
Reasons for donation (N=61)		
Emergency	46	(75.4)
Replacement	4	(6.6)
Organization activity	7	(11.5)
Free will	4	(6.5)
Reasons for non-donation (N=339)		
Fear	35	(10.3)
No opportunity	154	(45.4)
No knowledge	82	(24.1)
No reason	49	(14.5)
Unfit	19	(5.6)

such as hematinics, T-shirts and wrist bands (29.2%) would motivate respondents [Table 4]. Few respondents (46, 11.5%) would be motivated by money to donate blood.

## Discussion

The demographics showed the mean age of the respondents to be 22 years. Since recruiting a sufficient number of safe voluntary donors in Ilorin and Nigeria still remains a challenge, this population would form a large pool of donors if recruited in line with the Zimbabwe model of Club 25.<sup>[5]</sup> This study revealed that the respondents had good knowledge about blood donation, however, it did not find any significant relationship between age, ethnic group and literacy level with knowledge about voluntary blood donation. Even though the respondents had a good knowledge of blood donation, poor blood donation practice was observed in this study as 15.3% had ever donated and only 2.8% had voluntarily donated blood in the past. This finding agrees with the study in Mmbatho where only 17.5% of the high school students had ever donated blood.<sup>[6]</sup> The results of this study also revealed that almost an equal number of males (57.4%) and females (42.6%) had donated blood contrary to the study by Olaiya where female donors

**Table 4: Factors affecting voluntary blood donation (N=400)**

Variable	Frequency	(%)
Inhibitions	Yes	No
Fear of fainting	164 (41.0)	236 (59.0)
Inadequate information about it	202 (50.5)	198 (49.5)
Do not want to lose weight	93 (23.2)	307 (76.8)
It increases blood pressure	38 (9.5)	362 (90.5)
Body weakness afterwards	134 (33.5)	266 (66.5)
Exposure to HIV/Hepatitis	199 (49.8)	201 (50.2)
Leads to sexual failure	22 (5.5)	378 (94.5)
Causes fever	30 (7.5)	370 (92.5)
Causes convulsion	53 (13.2)	347 (86.8)
Motivation		
Adequate information	282 (70.5)	118 (29.5)
If it will save life	293 (73.2)	107 (26.8)
Gift items	117 (29.2)	283 (70.8)
Awarding certificate	79 (19.8)	321 (80.2)
National recognition	72 (18.0)	328 (82.0)
Pub. names in newspaper	41 (10.2)	359 (89.8)
Money	46 (11.5)	354 (88.5)

compared to males were abysmally low (1%).<sup>[7]</sup> This can be attributed to the increased knowledge of the respondents (96.5%) that both males and females can donate blood.

Comparable observations were also found among the students of Chulalongkon University, Thailand, where 80% of the participants knew about blood donation but only 11% of the study population had donated blood voluntarily.<sup>[8]</sup> In a similar study among the students of the University of Dhaka, Bangladesh, 80% of the participants showed a positive attitude towards blood donation; however, only 16% of the respondents had actually donated blood voluntarily.<sup>[9]</sup> A study in a Delhi urban slum reported that 7.7% of the participants had donated. Therefore, the findings of this study would suggest that greater knowledge about blood donation does not necessarily lead to actual blood donation practice, probably because of the mythical beliefs and wrong perceptions about blood donation still held by people.

Blood donations among the respondents in this study were mostly for beneficial reasons as the recipients were mostly friends (24.6%) and relatives (57.4%) and the majority claimed emergency situations compelled them to donate blood. The voluntarily donated blood was scarce (2.8%) and about two-thirds of those who had donated voluntarily, did so during organizations' activity. This agrees with the findings of Olaiya that voluntarily donated blood was donated during Religious week and Club activities.<sup>[7]</sup> Hence the need to explore the unions and departmental activities of tertiary institutions in the country as a means of voluntary blood donation drive.

The reasons given by the respondents for not donating blood

include lack of opportunity (45.4%) resulting from tight lecture schedules and inaccessibility of blood bank facilities, inadequate information about the benefits of voluntary blood donation to the donor, recipient and community (24.1%) as well as the fear (10.3%) that the process is harmful to the health of the donor. Additionally, other inhibitory factors that would deter them from blood donation were inadequate information about the blood donation process, fear of exposure to HIV/ Hepatitis infection (49.8%) and fear of fainting. This shows the wrong perception still held by people of the transmission of HIV infection. The same finding was seen in Mwanza, Tanzania where donors were afraid of being infected with HIV.<sup>[10]</sup> This was also a deterrent amongst the Scottish population as it adversely affected their blood donation practice. In Australia, a study conducted among the college students showed that the reluctance was mostly due to fear, contracting possible illness afterward and inconveniences of giving blood.<sup>[11]</sup> Another study in Mexico also found that non-donation was mainly due to the fear of getting dizzy after blood donation.

This study has shown that providing adequate information about blood donation (70.5%) and the knowledge that it will save lives (73.2%) would motivate students to donate blood voluntarily. Nonetheless, giving incentives (29.2%) such as wrist bands, T-shirts, pens and diaries would attract students to donate blood voluntarily. It was also found in the study conducted in Lagos that 41% of the respondents had preferred a certificate as an incentive, 13.6% preferred money and 2.5% would donate for nothing. Comparatively, in the present study 83.8% of the respondents showed willingness to donate blood voluntarily. This finding indicates that an incentive can be used in enhancing the effectiveness of blood donation campaigns.

A study in Baltimore also found that the donors would be encouraged to donate if specific incentives were offered; the highest response was for future blood credits and medical testing.<sup>[12]</sup> Another study in Texas also concluded that individuals donate in order to reduce medical risks and that earning future blood credits would be a primary motivator.<sup>[13]</sup> A study amongst the adults in Mwanza Region, Tanzania, also noted a positive attitude towards voluntary blood donation but the majority of the people will do so only for an incentive.<sup>[10]</sup> In Nigeria, the National blood transfusion service is making an effort to retain its voluntary donors by giving incentives such as free blood tests (blood group, hemoglobin genotype, HIV/ hepatitis) to donors, allowing the immediate family of volunteers to use blood without replacement and giving gift items such as certificates, T-shirts, hematronics, refreshments and badges.<sup>[3]</sup> When assessing donor incentives and enablers, the study found that, in general, people are focused primarily on

motivational tools, rather than rewards. This is critical in beginning to change the blood donation culture from replacement to that of volunteerism.<sup>[14,15]</sup>

## Conclusions

The findings of this research revealed that although the majority of respondents had good knowledge of blood donation, only a few had donated blood in the past. The Students' Union body and other Organizations in the University should include blood donation drive in their monthly/annual activities. Blood donor education and sensitization should begin at secondary school by blood donor organizers. The University authority, the University health service centre and the Hematology department of the Teaching hospital should collaborate in promoting voluntary blood donation among the students. Incentives and gift items such as T-shirts, wrist bands, hematinics and certificates can motivate an altruistic spirit among the students.

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