

KNOWLEDGE, ATTITUDE AND PRACTICE OF VOLUNTARY BLOOD DONATION BY UNDERGRADUATES IN A TERTIARY INSTITUTION IN SOUTH - SOUTH NIGERIA

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ABSTRACT

Background: Blood donation is a very important component of medical care delivery everywhere whether in elective or emergency situations. Unfortunately, it appears supplies have not matched demand especially in under-developed countries owing partly to low awareness among the populace – even among the literati! This study was aimed to assess the knowledge, attitude and practice of undergraduates of a tertiary institution in Nigeria towards voluntary blood donation.

Method: Following ethical clearance in December 2012, 196 consenting undergraduates (recruited by multistage sampling) of the University of Port Harcourt were selected to participate in this descriptive cross sectional study. They responded to a pre-tested, semi-structured, self-administered questionnaire, which probed their socio-demographics, knowledge, attitude and practice towards voluntary blood donation. Data collected was later analyzed using descriptive statistical tools.

Results: There was a high knowledge among respondents on voluntary blood donation and its benefits (i.e. 70% and 93% respectively) whereas there was an inversely low (36.2%) willingness to voluntarily donate blood with only 18.9% of respondents having actually donated blood in the past. Most (56.8%) blood donations were in emergency situations while reasons for having not donated in the past included fear of procedure and side effects, lack of opportunity to donate, poor awareness and being found unfit to donate.

Conclusion: Knowledge of voluntary blood donation was high among students of the University of Port Harcourt but donation was low due to poor awareness. There is need to increase awareness and take voluntary blood donation drives to our tertiary institutions.

Keywords: Blood, donation, undergraduates

INTRODUCTION

Blood donation refers to the process of collecting, testing, preparing and storing whole blood and blood components intended primarily for transfusion. A blood donation occurs when a person voluntarily has blood drawn and used for transfusions or made into medications by a process called fractionation. Based on immunologic make up, a donor could be compatible or not with the recipient^[1].

There are different types of blood donors. The non-remunerated voluntary blood donors are those who give blood willingly and do not receive any payment for it. In 2008, 62 countries collected more than 99% of their blood supplies from voluntary unpaid blood donors compared with 39 countries in 2002. The paid donors are those who give their blood in return for payment. The World Health Organization (WHO) reports that as at

2008, 26 countries still report collecting paid donations. The replacement donors are those that donate blood for family members^[2].

In the developing countries, blood donations are mostly involuntary (i.e. cash – for – blood) and usually from relatives, friends and workmates of patients. There is usually shortage of blood supply to blood banks as there is really no practice of voluntary blood donation for storage for community purposes³. Globally, 80 million units of blood are donated each year, but only 2 million units are donated in Sub-Saharan Africa where the need is enormous^[4]. In Nigeria, although half of the population in the country is medically fit for donation, only four in a thousand are voluntary blood donors^[4,5]. A national baseline survey conducted in August 2005 revealed that only about half a million units of blood were collected from private and public sources in the

previous year (August 2004-2005), a grossly inadequate figure for the then population of 120million people. Furthermore, the survey revealed that in the public sector, 25% of donors were commercial donors, 75% were replacement donors and the number of voluntary non-remunerated donors was negligible. However, in the private sector, 75% were commercial donors and 25% were replacement donors but the voluntary donors remained insignificant^[2,7]. 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.^[3,7]

Since infectious diseases can be transmitted through blood transfusion, there is need to source blood from a low-risk population. Usually, the safest donors are found among people who donate their blood voluntarily about three or four times a year, purely out of altruism, and are self aware of their unsuitability to serve as blood donors where there might be a slightest risk of causing health damage for blood recipients. Now, about 1 million units of blood are collected annually by both private and public hospital blood banks in Nigeria as against the estimated 2million that is actually needed. Only 2.5% of donor blood comes from altruistic, voluntary, non-remunerated donors; 16% are from paid donors (i.e. relatives or friends coerced into donation). However, some paid donors disguise as relatives. Unfortunately, people would rather pay touts who arguably donate poor quality blood as these touts may be unemployed, low class citizens with high risk lifestyles.^[8,9] This in contrast with the more enlightened, healthier and voluntary donors as more likely typified by students¹⁰

Studies in Nigeria found that most(92.9%) respondents donated because of the benefits they will obtain from the hospital. Such benefits include antenatal registration (67.1%) and saving the lives of relations (25.8%). Even though many of the donors are educated (98.9%), majority of whom have university degrees (36.1%) and have heard about blood donation before, 52.4% of them believe they can contract Human Immunodeficiency Virus and/or hepatitis infection from blood donation. A good number (47.0%) are afraid of what they regard as side effects, such as weight loss (23.8%), sexual failure (5.9%), high blood pressure (5.2%), sudden death (3.3%) and convulsion (1.4%). About 41.0% prefer certificates as an incentive for donation, whereas 13.6% prefer money; less than 3% will like their names announced or published on the media and 2.58% will donate for

nothing^[11,12].

The demand for blood transfusion is high in Sub-Saharan Africa because of the high prevalence of anaemia especially due to malaria and pregnancy-related complications^[13,14]. The university is mostly populated by very young, healthy, enlightened and willing individuals. Unfortunately this very important source of voluntary blood donation may not have been fully utilized. This study was to assess the knowledge, attitude and practice towards voluntary blood donation among undergraduates of the University of Port-Harcourt.

MATERIALS AND METHODS

Study design and population: This was a descriptive cross sectional study conducted in December 2012 at the University of Port Harcourt, Rivers State, Nigeria. The study was basically centred on campus-resident undergraduates (degrees only) - who constitute more than 80% of on campus residents. The university has between 35,000 and 40,000 students who reside both on and off campus. More than 60% of the entire school population reside off campus but this study was on undergraduate on campus residents.

Study tool: was a structured self-administered questionnaire distributed to respondents by 3 members of the research team. The questionnaire probed socio-demographics, knowledge attitude and practice of the students of University of Port Harcourt to voluntary blood donation. The questionnaires had been pre-tested amongst final year medical students of the University of Port Harcourt with similar socio-demographic characteristics and necessary amendments made subsequently.

Inclusion criteria were that respondents must be identity card carrying regular undergraduates residing on any of the three campuses of the University of Port Harcourt.

Data collection was door to door, daily, after school hours (i.e. between 4pm and 6pm), spanning two weeks at the students' hostels. They were retrieved on the spot upon completion. A multistage sampling technique was used to select respondents where 12 hostels were balloted for out of a total of 22 undergraduate hostels of the university. Then 196 respondents (following calculation from the formula for proportion) were systematically sampled from the earlier selected 12 hostels. Data collected were later analysed using descriptive statistical tools.

Ethical consideration: The study was cleared by the Department of Preventive and Social Medicine of the University of Port Harcourt and responding students provided signed informed consent prior to commencement of the study. Thereafter, respondents were educated on the benefits of voluntary blood donation.

Limitations: The study only covered undergraduates who resided on campus even when a good percentage of them stayed off campus. The off campus

undergraduates were difficult to reach as they lived side by side non-students either around the school or within the larger Port Harcourt city. The on campus residents were readily accessible and more importantly, verifiable hence were recruited for the study.

RESULTS

A total of 196 questionnaires were distributed to respondents, they were correctly responded to and without any drop outs.

Table 1: Socio-demographic data of respondents

| Variable | Frequency (n) | Percentage (%) |
|-----------------------|---------------|----------------|
| Age | | |
| <19 | 72 | 36.7 |
| 19 –23 | 71 | 36.2 |
| 23 –27 | 37 | 18.9 |
| 27 –31 | 16 | 8.2 |
| Total | 196 | 100.0 |
| Sex | | |
| Male | 105 | 53. |
| Female | 91 | 46.4 |
| Total | 196 | 100.0 |
| Religion | | |
| Islam | 5 | 2.5 |
| Catholics | 56 | 29.3 |
| Anglicans | 23 | 12.1 |
| Jehovah's witness | 14 | 7.3 |
| Adventists | 8 | 4.2 |
| Pentecostal | 90 | 47.1 |
| Total | 196 | 100.0 |
| Level of study | | |
| 100 | 37 | 18.8 |
| 200 | 44 | 22.6 |
| 300 | 37 | 18.8 |
| 400 | 43 | 21.9 |
| 500 | 16 | 8.2 |
| 600 | 19 | 9.7 |
| Total | 196 | 100.0 |

Figure 1: Multiple bar chart showing responses to the necessity of blood donation and if blood donation can save lives

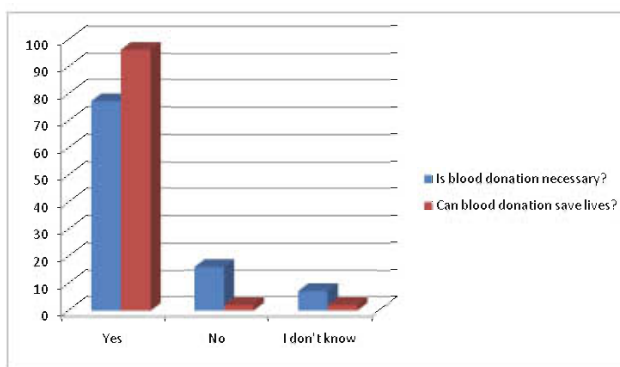


Table 2: Responses to the possibility of voluntary (non-remunerated) blood donation

| Possibility of voluntary blood donation | Frequency (n) | Percentage (%) |
|---|---------------|----------------|
| Yes, by anyone | 71 | 36.2 |
| Yes, in cases of emergency | 58 | 29.6 |
| No | 9 | 4.6 |
| No idea | 58 | 29.6 |
| Total | 196 | 100.0 |

Table 3: Practice of blood donation among respondents

| Variable | Frequency (n) | Percentage (%) |
|-------------------------------|---------------|----------------|
| Ever donated blood | | |
| Yes | 37 | 18.9 |
| No | 159 | 81.1 |
| Total | 196 | 100.0 |
| *Donation by gender | | |
| Male | 26 | 70.3 |
| Female | 11 | 29.7 |
| Total | 37 | 100.0 |
| *Recipients of blood donation | | |
| Friends | 6 | 16.2 |
| Relatives | 10 | 27.0 |
| Unknown persons | 21 | 56.8 |
| Total | 37 | 100.0 |
| *Reasons for donation (n=37) | | |
| Emergency | 21 | 56.8 |
| Pay back | 1 | 2.7 |
| Free-will | 11 | 29.7 |
| Remuneration | 4 | 10.8 |
| Total | 37 | 100.0 |
| Reasons for non-donation | | |
| Fear procedure is a harmful | 39 | 24.5 |
| Lack of opportunity | 36 | 22.6 |
| Inadequate knowledge | 23 | 14.5 |
| Unfit | 13 | 8.2 |
| No reason | 45 | 28.3 |
| Others | 3 | 1.9 |
| Total | 159 | 100.0 |

*respondents who had donated blood

**respondents who had never donated blood

DISCUSSION

People's knowledge, attitude and practice towards blood donation should directly be related to the availability of blood for use by potential recipients. Therefore, eliciting this interest to donate blood in young adults who are almost always fit to do so is a good step towards meeting the obviously deficient blood transfusion needs of the under developed world. No study to the authors' knowledge had been done on this group of respondents in Port Harcourt, south-south of the country with its peculiarities of ethnicity, language and religion.

University based studies among undergraduates in Lagos, Ilorin and Benin respectively, revealed that 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 reason many did not donate were lack of opportunity (45%) due to tight lecture schedule and inadequate knowledge (24%). Gift items such as haematinics, T-shirts and wrist bands (29%) would motivate respondents to donate. Furthermore, a community survey on blood practices revealed that the fear of HIV screening was the major hindrance and limitation to voluntary blood donation among respondents^[8,10].

The socio-demographics of this study was about the same as in similar studies done in other tertiary institutions in Nigeria save for the variable on religion where there was a reverse between Islam and Christian respondents as one moves either north or south of the country.

From Figure 1, 70% of respondents agreed that blood donation is necessary while 93% believed that blood donation can save lives. These findings are in keeping with earlier studies and underscore the high level of knowledge of the need and use of blood transfusion^[9,10,11].

The supposed 'gains' of this high knowledge have not translated into high willingness to donate blood (Table 2) as only 36.2% of respondents will be willing to do so under any circumstance while 4.6% will not donate (because of their religious inclination i.e. Jehovah's

Witnesses). Only 18.9% of our respondents had ever donated blood, 70.3% were males and reason for donation was primarily emergency situations which were in keeping with earlier studies. Major setbacks for non-donation include fear for the procedure and its side effects, poor awareness and lack of opportunity to donate.

CONCLUSION

There was high knowledge of blood donation among undergraduates of the University of Port Harcourt but the practice of donation was lacking. This study further emphasizes the urgent need for more enlightenment on the benefits of blood donation. It is also recommended that blood donation drives should go to the campuses rather than wait for this category of donors to come to them.

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APPENDIX

KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS VOLUNTARY BLOOD DONATION OF UNDERGRADUATES IN A TERTIARY INSTITUTION

We are of the Faculty of Clinical Sciences of the University of Port-Harcourt conducting a study on the Knowledge, attitude and practice towards voluntary blood donation of undergraduates in a tertiary institution. The information obtained from this questionnaire will be treated as confidential and used solely for the purpose of this research and nothing else. You are not obligated to respond to the questionnaire and there will be no repercussion for opting out. Thank you for your co-operation.

Please sign to show willingness to participate

ANSWER ALL QUESTIONS AND TICK WHERE APPROPRIATE

A) BIODATA

- 1) Age
☐ <19 ☐ 19 – 23 ☐ 23 - 27 ☐ 27 – 31
- 2) Sex
Male ☐ Female ☐
- 3) Religion
Christianity ☐ Islam ☐ Others ☐
Specify denomination
- 4) Faculty.....
- 5) Level of study.....

B) KNOWLEDGE OF BLOOD DONATION

- 6) Have you heard about blood donation?
Yes ☐ No ☐
- 7) What is blood donation?
☐ It refers to the process of collecting, testing, preparing and storing whole blood and blood components intended primarily for transfusion
☐ Collection of blood for the purpose of testing only
☐ Collection of blood for storage purposes only
☐ No idea

- 8) Who could donate?
- ☐ Adult male only
- ☐ Adult female only
- ☐ Adult male and female
- ☐ Children and Adults
- 9) How often can one donate in a year?
- ☐ Once
- ☐ Twice
- ☐ Three times
- ☐ Four times
- ☐ No idea
- 10) What volume of blood is donated?
- 1 pint ☐ 2 pints ☐ 3 pints ☐ 4 pints ☐ No idea ☐
- 11) Are you aware that donated blood is screened for transmissible infections?
- Yes ☐ No ☐
- 12) Which transmissible infections do you think are screened for?
- ☐ HIV, Hepatitis, other venereal diseases
- ☐ Malaria, Typhoid
- ☐ Measles, Chicken pox
- ☐ No idea
- 13) Is it good for a donor to give blood in cases of ill health?
- Yes ☐ No ☐ I don't know ☐
- C) **ATTITUDE TOWARDS BLOOD DONATION**
- 14) Is blood donation necessary?
- Yes ☐ No ☐ I don't know ☐
- 15) Can blood donations save lives?
- Yes ☐ No ☐ I don't know ☐
- 16) Is remuneration for blood donation necessary?
- ☐ Yes, blood donations must be remunerated
- ☐ No, remuneration is not necessary
- ☐ No opinion
- 17) Is voluntary non-remunerated blood donation possible?
- ☐ Yes, by anyone
- ☐ Yes, in cases of emergency
- ☐ No
- ☐ No idea
- 18) Do you think that blood donation has an effect on the health of the donor?
- Positive effect ☐ Negative effect ☐ No effect ☐
- D) **PRACTICE OF BLOOD DONATION**
- 19) Have you ever donated blood?
- Yes ☐ No ☐

- 20) Who was/were the recipient(s) of the blood donation?
Friends ☐ Relatives ☐ Unknown persons ☐
- 21) What type of blood donation do you practice?
Voluntary ☐ Non-voluntary ☐ Non-donor ☐
- 22) Reasons for donation
☐ Emergency
☐ Replacement of borrowed units from the blood bank
☐ Free-will
☐ Remuneration
- 23) Reasons for non-donation
☐ Fear that it is a harmful procedure
☐ Lack of opportunity to donate
☐ Inadequate knowledge of blood donation
☐ Unfit
☐ No reason