

Prospective study on blood donation awareness of medical science students at Nnamdi Azikiwe University, Awka

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Abstract: Background: Blood safety is an essential part of improving healthcare worldwide, and millions of lives are saved each year by donating blood. But most hospitals in the developing world face the problem of a lack of a constant blood supply to perform various life-saving procedures that require blood, due to a shortage of blood donors. There have been many studies on blood donation awareness, but only a few have focused on medical students. Objective: To determine the awareness of blood donations among medical and pharmacy students at Nnamdi Azikiwe University, Nnewi campus and Agulu respectively. Materials and Methods: Stratified sampling technique was used to divide students into strata (200, 300, 400, 500 and 600), and then simple random sampling to select different respondents from each class and self-administered questionnaires were administered. given to students. respondent.

Data is collected and results analyzed. Results: 294 respondents, 147 medical students and 147 pharmacy students participated in the study 141 (95.9%) medical students and 137 (93.2%) pharmacy students had heard of blood donation. . 139 (94.6%) medical students and 140 (95.2%) pharmacy students know their blood type. 59.5% of respondents have ever donated blood. The most common motivation to donate blood is "to save a friend or family member".

Conclusion: Students' knowledge about blood donation is high, but blood donation practice is still low.

Keywords: Perception, Blood Donation, Students, pharmacy.

I. INTRODUCTION

The World Health organization recommended that donated blood should be tested for [9] Hepatitis B surface antigen, Antibody of Hepatitis, Antibody of HIV, usually subtype 1 and 2, Serologic test for syphilis. In our environment, blood for donation is screened for the following infectious diseases which could be transmitted through blood transfusion: Human Immune Deficiency Virus (HIV), Hepatitis B, Malaria and Syphilis. In the developed countries, most blood donors are unpaid volunteers who give blood for a community supply. In developing countries, established supplies are limited and donors usually give blood when family or a friend needs a transfusion. Showed that 60% of respondents had fears and misconceptions about blood donation. A study in the Mwanza region of Tanzania showed that out of 1141 adults involved in the study, 26. 4% had already donated blood, but only 3. 8% had donated voluntarily within the previous 10 years [15].

A study among the students of University of Dhaka, Bangladesh revealed that 82% of the participants showed a positive attitude towards blood donation. However, only 60% of the respondents in the study had actually donated voluntarily, while 93% had a negative attitude towards paying blood donation [16]. In a study in Lithuania, Soviet Union, by Buciuniene et al. , it was found that paid donors comprised of 89. 9%, while non-paid ones made 10. 1% of the respondents. Research findings show that 93% of the paid-donors donated blood on a regular basis, while among the non-remunerated donors, the same figure amounted merely to 20.

The absolute majority of the paid donors (92%) think they should be offered a monetary compensation for blood donation, while more than half of the non-remunerated donors (55. 9%) claimed they would be content with a mere appreciation of the act. on doing it, 29. 6% would do it only in emergency, 29. 6% would donate blood merely for their family or friend and 12. 3% would quit it completely [17]. A study among students of the University of Crete, Greece showed that the number of students that had ever donated blood was relatively small (16. 6%) because they had little knowledge about blood donation, 83. 4% were ignorant of the condition and criteria applying to the blood donation in general. Also a high number of respondents (63. 1%) were ignorant of the social benefits from blood donation [18]. In the study at the Blood Centre of Umea University Hospital, Sweden, no statistically significant difference was found between male and female blood donors with regards to the general reasons and motives related to donating blood. The most frequently reported reasons for giving blood the first time were influenced from a friend (47. 2%) and request via media (23. 5%).

Among the general reasons/motives with the highest ranking of importance, the most reported motive for donating blood was general altruism (40. 3%), social responsibility/obligation (19. 7%) and influence from friends (17. 9%). General altruism and social responsibility/obligation were also the most frequent reasons for continuing to donate blood (68. 4% and 16. 0% respectively). The most common reported obstacle to becoming a regular blood donor was laziness (19. 1%) followed by fear of needles (10. 5%) [19]. A study conducted among students by the Chula Long Kom University in Thailand showed that 80% of the participants knew about blood donation while only 11% had ever donated blood voluntarily. Among non-donors, fear of get- ting infection was the commonest inhibiting factor to blood donation [20]. A study in Trinidad and Tobago re- ported that 81. 2% of the respondents had never donated blood and of the 18. 8% who had previously donated, replacement for a family member or friend was the commonest reason (86. 9%) [21].

II. METHODOLOGY

2.1 Study Area

This study was conducted at Nnamdi Azikiwe University, Nnewi and Agulu campuses, both located in Anambra State, Nigeria. Nnewi and Agulu are municipalities located in the State of Anambra. Nnewi is a metropolitan town located in the North Nnewi Local Government Area. It is famous for its auto parts business. The municipality has a population of approximately 391,227 as of the 2006 census.[22] There are two tertiary research centers in Nnewi, a preclinical facility at Otolu Nnewi and a clinical facility located inside Nnamdi Azikiwe University Hospital Nnewi. The preclinical classes are 200 and 300 level students while the clinical campus has 400, 500 and 600 level students. Agulu is the campus where pharmacy students live. It is located in the Anaocha Local Government Area in the state of Anambra. This region has the NAFDAC (National Agency for Food and Drug Administration) office in Anambra. The Faculty has 6 departments including: Faculty of Pharmacy and Pharmaceutical Technology, Faculty of Pharmacology and Traditional Medicine, Faculty of Pharmacology and Toxicology, Faculty of Clinical Pharmacy and Pharmaceutical Management, Faculty of Pharmaceutical Chemistry and Medicine , Faculty of Pharmacy. Microbiology and Biotechnology.

2.2 Study Design

The study was a cross-sectional descriptive study.

2.3 Study Population

This included the medical and pharmaceutical students of Nnamdi Azikiwe University, Nnewi and Agulu Cam- puses respectively.

2.4 Minimum Sample Size Calculation

The minimum sample size of the population (<10,000) was determined using the formula [23].

$$N_f \square \frac{n}{1 - \frac{n}{N}} \text{ where } N_f \text{ is the desired sample size.}$$

$$n \square \frac{z^2 pq}{d^2}$$

N is the estimated population.

z is the standard normal deviate, which is $1.96 = 2.0$.

p is the proportion of target population estimated to have a particular characteristic. 61% (0.61) [13].

q is $1 - p$.

d is the degree of accuracy which is 0.05.

$$z^2 pq$$

$$n \square \frac{\quad}{d^2}$$

$$n \square \underline{366}.$$

$$nf \square \underline{267}.$$

$$\text{Attrition} \square \frac{1 \square 267}{10} \square \underline{26.7}, \text{ with a rate of } 10\%.$$

$$10$$

$$\text{Minimum sample size} \square 26.7 \square 267 \square 293.7 \square \underline{294}.$$

2.5 Sampling Technique

The stratified sampling technique was used. The medical and pharmaceutical students were divided into classes (200, 300, 400, 500 levels) plus 600 level for medical students. This was done using the class list, and then simple random sampling (balloting) method was used to select respondents from each class.

2.6 Data Collection Tool

A self-administered structured questionnaire was used. The questionnaire was in 3 sections: demographic characteristics, knowledge regarding blood donation, attitude towards and practice of blood donation. This study was conducted between 15th March and 15th April 2014.

2.7 Ethical Consideration

Ethical approval was obtained from the NAUTH ethical committee.

2.8 Data Analysis

The data collected was analyzed using Statistical Software for Social Sciences (SPSS) Version 20. The following frequencies were presented in tables: the sociodemographic characteristics of the students, opinion of the students regarding blood donation, the proportion of the students that have actually donated blood or otherwise, the religious denomination of the students vis a vis the practice of blood donation, the motivating factors for blood donation and the reasons for not donating blood. Chi square test was used to test the association between the knowledge of the students regarding blood donation and the students' course of study.

III. RESULTS

Table 1 showed that the commonest age group was the 20 - 24 years age group for both the medical students and the pharmacy students while the least common age group is the ≥ 30 years age group. There were more male (60.9%) than female students (39.1%). The commonest class was the 200 level class (27.9%). The commonest religion was the Roman Catholics (48.6%).

Table 2 shows that 95.9% of the medical students and 93.2% know that blood donation is used in healthcare, but the difference is not statistically significant. 99.6% of the medical students knew their blood group while 95.2% of the pharmacy students knew their blood group, but the difference is not statistically significant. 93.2% of the medical students and 89.8% of the pharmacy students knew about cross-matching of blood, but the difference is not statistically significant. Majority of the students know that HIV can be transmitted through blood transfusion.

Table 3 shows that majority of the students believe that blood donation is a good practice in healthcare (83%).

They were more blood donors among the medical students (78.2%) than among the pharmacy students (40.8%) (**Table 4**).

Table 1. Demographic characteristics of the students.

Variables	Medical Students (%)	Pharmacy Students (%)	Total (%)
Age (years)			
15 - 19	13 (8.8)	14 (9.5)	27 (9.2)
20 - 24	87 (59.2)	92 (62.6)	179 (60.9)
25 - 29	37 (25.2)	36 (24.5)	73 (24.8)
≥30	10 (6.8)	5 (3.4)	15 (5.1)
Sex			
Male	94 (63.9)	85 (57.8)	179 (60.9)
Female	53 (36.1)	62 (42.2)	115 (39.1)
Class Distribution			
200 level	24 (16.0)	58 (39.0)	82 (27.9)
300 level	25 (17.0)	38 (26.0)	63 (21.4)
400 level	22 (15.0)	32 (32.0)	54 (18.4)
500 level	39 (27.0)	19 (13.0)	58 (19.7)
600 level	37 (25.0)	0 (0)	37 (12.9)
Religion			
Catholic	67 (45.6)	76 (51.7)	143 (48.6)
Anglican	43 (29.3)	48 (32.7)	91 (31.0)
Pentecostal	32 (21.8)	18 (12.2)	50 (17.0)
Jehovah's witness	0 (0)	4 (2.7)	4 (1.4)
Muslim	1 (0.7)	0 (0)	1 (0.3)
Others	4 (2.8)	1 (0.7)	5 (1.7)

Table 2. Association between the knowledge of the students regarding blood donation and their course of study.

Variables	Medical students				Pharmacy students				X ²	P
	Yes	% Yes	No	% No	Yes	% Yes	No	% No		
Know about blood donation in healthcare	141	95.9	6	4.1	137	93.2	10	6.8	1.06	>0.05
Knowledge of blood group	139	99.6	8	5.4	140	95.2	7	4.8	0.07	>0.05
Knowledge of cross matching	137	93.2	10	6.8	132	89.8	15	10.2	1.09	>0.05
Knowledge of HIV transmission through blood transfusion	142	96.6	5	3.4	139	94.6	8	5.4	0.73	>0.05

Table 3. Attitude of the students towards blood donation.

Opinion	Medical students		Pharmacy students		Total (%)
	Frequency	%	Frequency	%	
Good practice	129	87.6	115	78.2	244 (83)
Not to be encouraged	11	7.5	20	13.6	31 (10.5)
Indifferent	7	4.8	12	8.2	19 (6.5)

Table 5 shows that Catholics had the highest positive response on practice of blood donation both among the medical students (85.5%) and the pharmacy students (53.3%). As expected none of the Jehovah's witnesses has ever donated blood.

Table 6 shows that the commonest motivating factor towards blood donation among the students is "to save a friend or family member".

Figure 1 is a bar chart showing the reasons why the students gave for not donating blood. The blue bars represent medical students while the orange bars represent the pharmaceutical science students. The commonest reason for not donating blood by the students is the fear of infections, followed by the fear that they will develop fever.

IV. DISCUSSION

On the knowledge of blood donation, a high proportion of medical students (95.6%) and pharmacy students (93.2%) knew about blood donation and this is in consonance with a study conducted among students of Chula Hong Kong University in Thailand where 80.0% of the participants had knowledge of blood donation [20]. In the index study 99.6% and 95.2% of the medical and pharmacy students knew their blood groups. This is higher than 82% reported among students in India [24]. An even lower figure of 69.5% was reported in a study in Nepal [25]. However, a similar figure of 93.9% was reported among healthcare workers in Benin, Nigeria [26]. In the index study, 96.6% and 94.6% of the medical and pharmacy students respectively knew that HIV can be transmitted through blood donation. This is similar to the finding of a study in Benin which reported 91.4% [26], but lower than 68.9% reported in Nepal [25]. 83% of respondents in the index study believe that donation is a

Table 4. Proportion of students that have ever donated blood (practice).

Variable	Pharmacy students (n-147)				Medical students (n-147)			
	Yes	% Yes	No	% No	Yes	% Yes	No	% No
Ever donated blood?	115	78.2	32	21.8	60	40.8	87	59.2

Table 5. Cross tabulation of the students religious denomination vs the status of haven donated blood.

Religious denomination	Pharmacy students				Medical students			
	Yes	% Yes	No	% No	Yes	% Yes	No	% No
Catholics	47	85.5	10	17.5	34	52.3	31	47.7
Anglican	33	86.8	5	13.2	11	33.3	22	66.7
Pentecostal	25	80.6	6	19.4	9	32.1	19.9	67.9
Muslim	0	0.0	0	0.0	0	0.0	0	0.0
Jehovah witness	0	0.0	9	100.0	0	0.0	7	100
Others	10	83.3	2	16.7	6	42.9	8	57.1

Table 6. Greatest motivating factor for blood donation.

Response	Medical student's		Pharmaceutical students	
	Frequency	%	Frequency	%
Money	10	8.7	6	10.0
To save a friend or family member	57	49.6	27	45.0
It is my social responsibility	32	27.8	19	31.7
I just feel like doing it	16	13.9	8	13.3

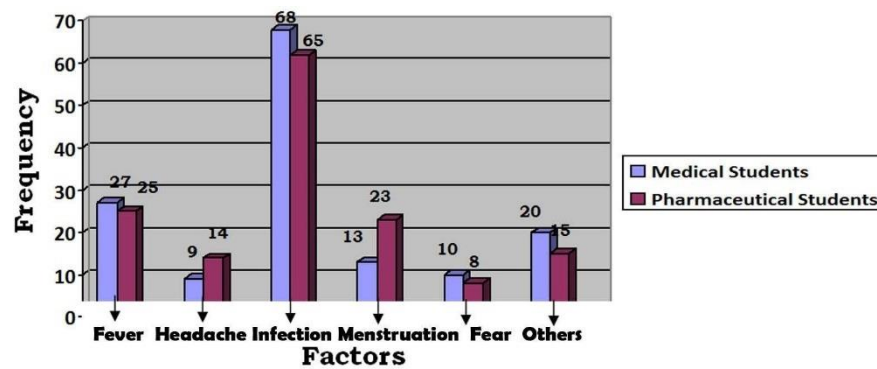


Figure 1. Reasons for not donating blood.

good practice in healthcare and should be encouraged. A similar figure of 81.6% was reported in Benin, Nigeria [26], a higher figure (97.6%) was reported among students in India [25]. A probe into the practice of blood donation among the students in this index study revealed that 59.5% of the respondents have donated blood previously. This is higher than the reported figures of 18.7%, 18.1%, 22.1%, and 24.6% in several studies [24] [25] [26]. In the index study when asked reasons for not donating blood, 56.3% of medical respondents and 42.2% of pharmaceutical respondents had fear of infection as their reason for not donating blood. This is relatively in line with a study done on community mobilization for blood donation in Cross Rivers State Nigeria where fear of contracting HIV (65.0%) was the commonest reason for not donating blood [14].

On the greatest motivating factor for blood donation, 49.6% of the medical respondents who answered the question and 45.0% of the pharmacy students believed that their greatest motivator was to save a friend or a family member. This is in consonance with the study at the blood centre of Umee University Hospital, Sweden, where 47.2% of the respondents said their motivator for donating blood was to save a friend [19].

V. CONCLUSIONS AND RECOMMENDATIONS

This study demonstrates that although students have good knowledge about blood donation, the fact that blood donation behavior is not high and their reasons for not donating blood are problems that can be effectively treated. We therefore recommend that: Religious organizations provide a platform to educate their members about the need to donate blood. They should encourage their members to practice altruism and acts of kindness, and remove unnecessary worries about donating blood because it is safe to do so. The government should launch a broad information campaign about the social implications of voluntary blood donation. The media should be more involved in this advocacy, as should health, professional and non-governmental organizations such as corporate social responsibility. More research on blood donation needs to be conducted and published so that people can appreciate the shortage of blood donors. This will encourage more people to be willing to donate blood and help others in need. The authorities of student associations and other organizations in universities should include blood donation in their activities. Limitations: Only 294 students participated in this study. It's because of resources. We suggest conducting further studies with a larger number of students and involving more faculties. This will produce more reliable results.

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