Knowledge and practice of blood donation among university undergraduates

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Abstract

Background: Blood donation is an essential component of health care which saves millions of lives each year. Students of tertiary institutions in Nigeria constitute a significant percentage of the population who are considered to meet the criteria for voluntary blood donation. We sought to assess the knowledge, attitude and practice of blood donation among undergraduates to provide data for developing effective strategies targeted at the youth.
Methods: This was a descriptive cross-sectional study of 419 students of the University of Lagos, Nigeria using self-administered questionnaires.
Results: The mean age of the respondents was 22.2± 3.8 years; and 88.5% had heard of blood donation. Only 14.3% of the respondents had good knowledge about blood donation. More of the students in the higher level had good knowledge of blood donation (χ^2= 42.9, p < 0.001). Eighty three percent of the respondents had positive attitude towards blood donation, only 19.6% of the respondents had donated blood before; among this group 72% were willing to donate again. More of the males and students in the higher levels had donated blood (χ^2= 7.71, P=0.005, χ^2=25.7, p<0.0001 respectively).
Conclusion: The students had inadequate knowledge and poor practice of blood donation and these needs to be improved on. Establishment of voluntary blood donor club on the campus and enlightenment campaigns are needed to improve the knowledge and of blood donation practices of youths.

Key Words: Attitude, Blood donation, Knowledge, Nigeria, Practice, Students

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Introduction

Blood donation is an essential component of health care which saves millions of lives each year. Every second, someone in the world needs blood for surgery, as a result of trauma, severe anaemia or complications of pregnancy. Each year, more than 100 million people sustain injuries and more than five million die from violence and injury. Road traffic accidents are the second leading cause of all deaths and the primary reason for serious injury in people aged five to 29 years.[1]

More than 536, 000 women die each year during pregnancy or childbirth, 99% of them in developing countries.[2] Haemorrhage is the principal cause of maternal death worldwide, accounting for up to 44% of maternal deaths in some areas of sub-Saharan Africa.[3] Up to 20% of maternal mortality and 15% of child deaths have been attributed to severe anaemia due to malaria in the Southern African Region.[4] Timely access to safe blood transfusion is a life-saving measure in many of these clinical conditions and can also prevent serious illness in these patients.

Of the estimated 80 million units of blood donated annually worldwide, less than 45% is collected in developing countries, home to 80% of the world's population. The average number of blood donations per 1,000 population is 10 times higher in high-income countries than in low-income countries. Generally it is recommended that the equivalent of 1–3% of the population should donate blood to meet a country's needs.[5] Of the 73 countries that had donation rates of less than 1% of the population (fewer than 10 donations per thousand people) in 2006, 70 were in developing countries. Only 54 countries achieved 100% unpaid voluntary blood donation[6] Data from sub-Saharan Africa show that fewer than 3 million units of blood were collected in 2006 for a population of nearly 600million people.[7]

The shortage of voluntary non-remunerated blood donors is a problem in Nigeria, a national study conducted by the national blood transfusion service showed that in the public sector, 75% of donated blood was from replacement donors while a high proportion was also from commercial donors.[8] There is an increasing need to encourage blood donation by donors that fulfil the criteria for safe blood donation and nowhere is this need greater than in developing

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countries.[9] It therefore becomes necessary to assess the knowledge, attitude and practice of blood donation among undergraduates to provide data for developing effective strategies targeted at the youth.

Materials and Methods

This cross-sectional descriptive study was carried out among the undergraduate students of University of Lagos. It has twelve faculties and student enrolment of over 39,000 as at February 2011. The institution offers 117 programs in undergraduate and postgraduate capacity. Using the formula for descriptive study, minimum sample size of 384 was calculated this was increased by 10% to 422. A multistage sampling technique which included simple random sampling to select two departments from three faculties in the university was employed. The calculated sample size was divided among the faculties based on the number of students. All the levels in each department were used and the number of respondents that was selected from each class was in proportion to the population of students in the class. The selection of individual respondents was done from each level using systematic random sampling.

Structured pretested questionnaires were self-administered to consenting respondents (419) in April, 2011. The responses were scored with one mark awarded to each correct response. The maximum score in the knowledge section was seven (7) with scores greater than four (4) graded as good knowledge. There were nine (9) statements in the attitude section which was graded using a 5-point Likert scale, the maximum score was 45 with scores > 28 were graded as positive. For the practice section, respondents who had donated blood in the past were graded as having good practice. Main outcome measures were Proportions of respondents with; adequate knowledge on blood donation; positive attitude to blood donation; good practice of blood donation. Data was analyzed using EPI Info version 3.5.1. Results are presented as frequency tables. Statistically significant association was demonstrated using Pearsons' Chi-square at p <0.05.

Results

Characteristics of subjects

Almost half (48.0%) of the respondents were within the 21 to 25 years age range, with mean age of 22.2±3.8 years. The majority were males (57.8%), single (94.3%) and of the Yoruba ethnicity (73.3%). Students from department of Law made up 31.5% of the respondents, 22.7% were in the department of Medicine and Surgery, 20.5% in Accounting, 20.5% in banking and Finance and the remaining 4.8% were in Physiotherapy department. The highest proportions of the respondents were in the second and fourth years of study (23.6% and 25.8% respectively).

Knowledge

Majority (88.5%) of the respondents had heard about blood donation. The sources of information about blood donation were billboards (49.2%), followed by print media (44.2%), family and friends (40.8%) and electronic media (40.8%). A little more than half knew the correctly what blood donation entails and the standard age range eligible to donate (53.9% and 54.9% respectively). Few (13.6%) of the respondents knew the transfusion transmissible diseases screened for at blood donation. Only 7.9% of the respondents knew the group of people who were ineligible to donate blood and 12.6% knew the minimum time interval between two consecutive blood donations. Very few (3.6%) of the respondents knew all the components of blood that can be donated while 10.9% knew the amount of blood withdrawn from an individual during blood donation. Overall, 14.3% of the respondents had good knowledge of blood donation. Statistically significant association was observed between the respondents' department, level of study and their knowledge of blood donation. The highest proportion of students with good knowledge of blood donation was in Physiotherapy department while the proportion of students with good knowledge of blood donation increased from the second year of study upwards (Table 1).

Table 1: Association between characteristics of students at the University of Lagos and their knowledge and practice of blood donation

	Overall Knowledge			P value
	Total	Poor, N (%)	Good, N (%)	
Department				
Accounting	86	79 (91.9)	7 (8.1)	< 0.0001
Banking & Finance	86	78 (90.7)	8 (9.3)	
Law	132	118 (89.4)	14 (10.0)	
Medicine & Surgery	95	75 (78.9)	20 (21.1)	
Physiotherapy	20	9 (45.0)	11 (55.0)	
Year of Study				
1st	67	62 (92.5)	5 (7.5)	< 0.0001
2nd	99	92 (92.9)	7 (7.1)	
3rd	76	68(89.5)	8 (10.5)	
4th	108	90 (83.3)	18 (16.7)	
5th	55	40 (72.7)	15 (27.3)	
6th	14	5 (35.7)	9 (64.3)	
	Overall Practice			**P value**
	Total	**Poor, N (%)**	**Good, N (%)**	
Sex				
Male	242	183 (75.6)	59 (24.4)	0.004
Female	177	154 (87.0)	23 (13.0)	
Year of Study				
1st	67	59 (88.1)	8 (11.9)	0.001
2nd	99	77 (77.8)	22 (22.2)	
3rd	76	63 (82.9)	13 (17.1)	
4th	108	95 (88.0)	13 (12.0)	
5th	55	37 (67.3)	18 (32.7)	
6th	14	6 (42.9)	8 (57.1)	

Attitude

Less than a quarter (23.7%) of the respondents agreed that blood donation had negative effect on health, 36.3% of them believed that blood donation should not be seen as a moral duty. Very few believed that blood donation can expose an individual to evil attack and that it should be discouraged because it is harmful to health (14.6% and 6.5% respectively). Fifteen percent of the respondents would like to donate if they would be financially rewarded and 6.9% of them agreed that there is no need for blood donation. A quarter, (25.8%) would like to donate to save the life of only the people they know and 22.1% believed that giving blood to others can lead to long term decline in health and vitality. Sixty-eight (16.2%) would not donate because they believe they can contact HIV and Hepatitis in the process. Overall, majority (82.8%) of the respondents had a positive attitude towards blood donation.

Practice

Only 19.6% of the respondents had donated blood in the past, often (45.1%) to help a person in need; 43.9% donated for altruistic reasons while 11% did so for financial reward. Among this group of blood donors, 72% will be willing to donate again. For respondents who had never donated blood in the past, 36.2% did not have any specific reason for not doing so. Other major reasons why respondents had not donated blood before were fear of complications and needle prick, lack of time and not knowing that it was important to donate blood. Statistically significant association was observed between the sex and level of study of respondents and their practice of blood donation, more of the male respondents and more of the 600L students had donated blood (χ^2=7.71 p= 0.005, χ^2=25.7 p=0.001) as shown in Table 1. A larger proportion of the respondents who had good knowledge also had good practice of blood donation even though it was not statistically significant.

Discussion

The study showed that there was high awareness of blood donation among the respondents and this was majorly through billboards on blood donation, print and electronic media. This differs from findings of another study carried out among patients at a health facility in Saudi Arabia where relatives, friends and health care workers were the major sources of information on blood donation.[10] The students however did not have good knowledge about blood donation. It is also possible that their overall knowledge might have been better if they had been donating blood. Their knowledge is not satisfactory when compared with other studies. University students' knowledge of blood donation in Kerman city was better as more than 50% of the students answered five questions out of nine correctly.[11] This finding has also been reported among women in Yazd city, Iran, where more than 50% questions on blood donation correctly.[12] Another study among Thai students showed that 80% of respondents scored more than 50% of the total knowledge score.[13] Higher knowledge scores were expected from the undergraduates due to their higher educational background.

Students in the health science departments (Medicine and Surgery, and Physiotherapy) had better knowledge compared to their counterparts in the other faculties (Accounting, Banking and Law). Expectedly, this is as a result of their courses of study. The level of study of the respondents was also positively associated with their knowledge of blood donation with more of the students in the higher levels of study having good knowledge. This may be due to higher exposure of respondents at higher levels of study. Thus, the longer an individual stayed on campus, the more exposure to blood donation activities he/she is likely to get.

Forty six percent of the respondents in this study believe that blood donation is a moral duty this is much lower than the ninety-eight percent of the urban population in an Iranian study that believe that blood donation is a moral duty with a spiritual reward.[14] Perceived negative effects of blood donation on their health mentioned by the students are similar to those mentioned by another set of respondents in Lagos such as contacting HIV and hepatitis and weight loss.[15] Overall 80% of the respondents had a good attitude towards blood donation being similar to the findings of study among Bangladeshi students where 82% had a positive attitude towards blood donation.[16]

Despite their good attitude, the practice of blood donation is poor as only 19.6% of the respondents had ever donated blood. Unfortunately, in developing countries, good attitude hardly transforms to actual donation.[17] This practice is however better than the 11% among University students in Thailand,[16] but contrasts the 81% reported among the general population in Trinidad and Tobago.[18]

Females lose blood monthly during menstruation and also at childbirth and this may explain why they do not donate as much as the males. They probably feel that the blood donation will further 'reduce' their blood levels. A review of studies on blood donation in Sub-Saharan Africa shows that donors are predominantly young males.[19] In United States of America and France, females had better blood donation practices.[20,21] The significant, positive influence of higher year of study and better knowledge on their attitude and practice is likely due to better exposure.

Among the blood donors, health reasons and altruism were the most important motivating factors for blood donation. Less than half of those who had never donated did not have any specific reason for not donating, but for the rest, the major reasons cited were

lack of time, fear of needle prick and fear of complications. This is in contrast to findings from southeast Nigeria where socio-cultural barriers to voluntary blood donation were identified among a predominantly illiterate rural community.[22] Our results provide opportunities for intervention as these barriers can readily be addressed by enlightenment campaigns. Other interventions have been utilised; for instance a study conducted in the USA showed that incentives like blood investigations (serum cholesterol, prostatic specific antigen and complete blood count) and souvenirs resulted in an increase in the number of blood donors.[23] In Lithuania and Germany, appropriate remunerations are motivations for blood donation.[24,25] As much as 15% of our respondents would donate blood if they would be financially rewarded. A recent review suggest that making blood donors satisfied with their blood donation experience, appropriate use of incentives, quickly recapturing temporarily deferred blood donors, and appealing to blood donors' personal motivations and moral norms are key to blood donor retention.[26] These strategies may as well be explored in Nigeria, to improve blood donation practices.

Our study had some limitations. The study was conducted in an institution of higher learning. The students are likely to be more knowledgeable than the general populace. In addition, including medical students in the survey is likely to have impacted our findings on knowledge. A community-based study would have been more representative.

Conclusion

The study showed that the students had inadequate knowledge and poor practice of blood donation and this needs to be improved upon. Establishment of voluntary blood donor club on the campus and enlightenment campaigns are needed to improve their knowledge and practice of blood donation.

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