

Original Article

Willingness to Support Antenatal Blood Donation Among Married Men in a Metropolitan City in North-central Nigeria

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ABSTRACT

Aims and Objectives: Improving blood availability through voluntary or compulsory antenatal blood donation is pivotal to reducing maternal morbidity and mortality in developing countries. Willingness to donate blood is adjudged to be an important step to the actual practice of donating blood. This study aimed to determine the knowledge, attitude and willingness of men towards antenatal blood donation.

Patients and Methods: This was a descriptive cross-sectional study. A multi-stage sampling technique was used to recruit 500 married men into the study using interviewer-administered questionnaire. Data analysis was done using SPSS version 16 software package. Pearson's Chi-squared test was used to test for significant associations between variables. A $P < 0.05$ was considered as statistically significant.

Results: More than half 300 (60%) of the respondents had good knowledge of antenatal blood donation in general. Majority (85.8%) of the respondents were willing to support voluntary blood donation. The overall attitude to blood donation was positive in 77.8% of the respondents. A significantly higher proportion 268 (89.3%) of respondents with good knowledge of antenatal blood donation were willing to donate blood ($P = 0.0006$).

Conclusions: The majority have good knowledge and positive attitude towards antenatal blood donation. However, there is need to urgently transform this positive attitude to action through continual public enlightenment to reduce maternal morbidity and mortality.

KEY WORDS: Antenatal blood donation, knowledge, men, North-central Nigeria, willingness

INTRODUCTION

Blood has remained an indispensable tool in many life-saving conditions and as such is the most widely donated tissue in medical practice.^[1] There are several conditions in which blood transfusion is needed to either save or maintain life. Clinical conditions that require blood transfusion include surgery, haemorrhage from trauma and severe anaemia from chronic or acute illness as well as obstetrics complications. Although obstetric haemorrhage has remained a major cause of maternal morbidity and mortality worldwide, it wrecks more grievous havoc in developing countries.^[2]

While it accounts for as high as 34% of maternal deaths in Africa and 31% in Asia, obstetric haemorrhage is responsible for only 13% of maternal deaths in developed countries.^[2] As a matter of fact, whenever someone needs blood in developing countries; it is more likely to be a pregnant woman.^[3] Substandard management^[4] coupled with the inadequacy of blood transfusion services^[5,6] are identified as contributory factors to 80% of maternal deaths associated with obstetric haemorrhage in sub-Saharan Africa. Since obstetric complications remain the leading indication

for blood transfusion in developing countries,^[3] efforts to improve blood availability in the form of voluntary or compulsory antenatal blood donation remains a priority in reducing maternal morbidity and mortality in developing countries.

Men have always been the major blood donors because they are physiologically endowed with higher haemoglobin levels which make them more suitable to donate blood. Several studies^[7,8] have shown that women constitute a minor proportion of blood donors. Apart from being physiologically disadvantaged with lower haemoglobin level, poverty, malnutrition repeated pregnancies, food taboos and negative cultural norms contribute to perpetual anaemia in women in the developing countries.^[9] This study, therefore, set out to determine the knowledge, attitude and willingness of the men towards antenatal blood donation.

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SUBJECTS AND METHODS

This descriptive cross-sectional study was carried out in Ilorin, Kwara State, North-Central Nigeria between July and September 2013. The population under study included married men aged 20–59 years from all spheres of life residing within Ilorin metropolis. Using multi-stage sampling technique; a total of 500 men were recruited into the study. The city was first divided into 10 clusters of communities using cluster sampling method. Five communities were selected using simple random sampling technique by balloting without replacement. In each selected community, the respondents were selected through a systematic sampling of households.

A sampling frame of the households in each of the sampled community was prepared through household numbering and enumeration. Systematic sampling technique was then adopted to select the households to be included in the study. For households with more than one eligible respondent, simple random sampling by balloting was used to select one respondent. In households, where there were no eligible respondents or where the respondents were unwilling to participate, the next household in the sampling frame was visited, while maintaining the sampling interval, to recruit consenting and eligible respondents. The pre-tested, semi-structured, interviewer-administered questionnaire was administered by six trained research assistants.

The data generated from the study were manually checked for possible errors and inconsistencies before data entry. Respondents' knowledge and attitude regarding antenatal blood donation were scored and graded. A correct answer was awarded a score of 1 point while a wrong answer was scored 0 point. The maximum scores for knowledge and attitude were 17 and 5, respectively, while the minimum score was 0 in both cases. For knowledge, the grading was categorised into 'good' for respondents that scored between 8 and 17 points (8–17); and 'poor' for those respondents that scored below 8 (0–7) points. Respondents who scored 2 points or less (0–2) were categorised as having 'negative' attitudes while those that scored 3 points and above (3–5) were regarded as having 'positive' attitudes. Analysis of data was done using SPSS version 16 software package (SPSS Inc. Released 2007, Chicago) and was presented using frequency tables. Cross tabulation of variables were also done. Chi-squared test was used to test for significant associations between variables. $P < 0.05$ was considered as statistically significant.

Ethical approval for the study was obtained from the Ethical Review Committee of Kwara State Ministry of Health while informed consents of the respondents were also sought. The exclusion of unmarried men, which is another healthy pull of potential voluntary blood donors, was a major limitation to this study.

RESULTS

The ages of the respondents ranged from 20 to 59 years, with a mean of 39.2 ($\pm$ 6.9) years [Table 1]. Majority (406) of the respondents were Yoruba (81.2%). Men with no formal education constituted 2.8% of the respondents. Up to 98.4% of

the respondents were aware of blood donation generally while 84.2% were aware of antenatal blood donation in addition. Majority 258 (51.6%) were aware through their interaction with health workers [Table 2]. More than half 300 (60%) of the respondents had good knowledge of antenatal blood donation in general. More than three-quarters of all the respondents knew the meaning of blood donation (95.4%) and antenatal blood donation (86.0%), respectively [Table 3].

Majority of the respondents knew that blood shortage (73.6%) and bleeding during pregnancy (81.4%) could require blood transfusion. Whereas 94.6% of the respondents knew that not everyone is eligible to donate blood, about a third of them (29.6%) knew that employing a paid donor was an available option. Less than a quarter of the respondents (18.6%) agreed that voluntary blood donation is the most suitable source of blood for pregnant women. More than two-thirds of them (70.6%) had a misconception that direct family blood donation on request is the best method to source for blood for pregnant women in need of blood [Table 4].

Table 1: Sociodemographic characteristics of the respondents (n=500)

Variable	Frequency (%)
Age range (years)	
20-29	28 (5.6)
30-39	242 (48.4)
40-49	183 (36.6)
50-59	47 (9.4)
Level of education	
Informal	14 (2.8)
Primary	7 (1.4)
Secondary	67 (13.4)
Tertiary	412 (82.4)
Ethnicity	
Yoruba	406 (81.2)
Hausa	41 (8.2)
Igbo	39 (7.8)
Others	14 (2.8)

Table 2: Awareness of respondents on antenatal blood donation (n=500)

Variable	Frequency (%)
Awareness of blood donation	492 (98.4)
First source of information on blood donation	
Mass media	299 (59.8)
Health worker	148 (29.6)
Friends/relatives	45 (9.0)
Spouse	8 (1.6)
Awareness of antenatal blood donation	421 (84.2)
First source of information on ANC blood donation	
Health worker	258 (51.6)
Mass media	133 (26.6)
Friends	97 (19.4)
Spouse	12 (2.4)

ANC: Antenatal care

More than four-fifth (85.8%) of the respondents were willing to support voluntary blood donation [Table 4]. With regards to unutilised donated blood, majority (89.8%) preferred to have it used for other pregnant women in need of blood while the others want it transfused back to them (1.8%) or get paid in cash for it (8.4%).

The overall attitude to blood donation was positive in 77.8% of the respondents [Table 4]. The attitudinal disposition of the respondents had a significant influence on their willingness

Table 3: Knowledge of antenatal blood donation among respondents (n=500)

Variable	Frequency (%)	
	Yes	No
Correct meaning of blood donation	477 (95.4)	23 (4.6)
Correct meaning of ANC blood donation	430 (86.0)	70 (14.0)
Conditions requiring blood transfusion in pregnancy		
Spontaneous abortion	220 (44.0)	280 (56.0)
Blood shortage	368 (73.6)	132 (26.4)
Caesarean section	209 (41.8)	291 (58.2)
Bleeding (antepartum and postpartum haemorrhage)	407 (81.4)	93 (18.6)
Paid donor is acceptable	148 (29.6)	352 (70.4)
Everyone is eligible to donate	27 (5.4)	473 (94.6)
Knowledge score		
Good knowledge	300 (60)	200 (40)
Poor knowledge	200 (40)	300 (60)

ANC: Antenatal care

Table 4: Attitude of respondents towards antenatal blood donation (n=500)

Variable	Frequency (%)
Willingness to support voluntary blood donation	
Yes	429 (85.8)
No	71 (14.2)
Preference for a paid donor for antenatal blood donation	
Yes	134 (26.8)
No	359 (71.8)
Undecided	7 (1.4)
Preferred source of blood for wife's antenatal blood donation	
Voluntary blood donation at the blood bank	93 (18.6)
Direct family blood donation on request	353 (70.6)
Replacement blood donation after resuscitating the patient	16 (3.2)
Use of commercial blood donor	23 (4.6)
Undecided	15 (3.0)
What to do with unutilised donated blood	
Give back to me	9 (1.8)
Donate to other pregnant women in need of it	449 (89.8)
Pay me in cash for it	42 (8.4)
Attitude score	
Positive attitude (3-5)	389 (77.8)
Negative attitude (0-2)	111 (22.2)

to donate blood. Up to 88.5% of respondents with positive attitude compared with 74.2% of respondents with negative attitude were willing to donate blood. The observed difference was statistically significant with a $P = 0.001$ [Table 5].

The level of education of the respondents has a positive influence on their overall knowledge and attitude towards antenatal blood donation. A significantly higher proportion 258 (62.2%) of respondents with tertiary education had good knowledge of antenatal blood donation compared with only 4 (28.6%) of respondents with no formal education; $P = 0.043$ [Table 6]. Similarly, 348 (84.5) respondents with a tertiary level of education had a positive attitudinal disposition towards absolute neutrophil count blood donation compared to 5 (35.7) respondents with no formal education; $P = 0.000$ [Table 7].

Whereas more than four-fifth 268 (89.3%) of respondents with good knowledge of antenatal blood donation were willing to donate blood less than one-fifth 39 (19.5%) of respondents with poor knowledge were willing to do so. The observed difference was statistically significant with a $P = 0.0006$ [Table 8].

Table 5: Relationship between respondents' attitude and their willingness to support antenatal blood donation

Attitude score of respondents	Willingness to support ANC blood donation (%)		
	Yes	No	Total
Positive attitude (3-5)	360 (88.5)	47 (11.5)	407 (100)
Negative attitude (0-2)	69 (74.2)	24 (25.8)	93 (100)
Total	429 (85.8)	71 (14.2)	500 (100)

$\chi^2=7.685$; $df=1$; $P=0.001$. ANC: Antenatal care

Table 6: Relationship between respondents' level of education and their knowledge of antenatal blood donation

Level of education	Knowledge of respondents		
	Good (%)	Poor (%)	Total
No formal education	4 (28.6)	10 (71.4)	14 (100.0)
Primary	2 (28.6)	5 (71.4)	7 (100.0)
Secondary	36 (53.7)	31 (46.3)	88 (100.0)
Tertiary	258 (62.6)	154 (37.4)	412 (100.0)
Total	300 (60.0)	200 (40.0)	500 (100.0)

Yates Chi-square (χ^2) value=8.171; $df=3$; $P=0.043$

Table 7: Relationship between respondents' level of education and their attitude towards antenatal blood donation

Level of education	Attitude score (%)		
	Positive	Negative	Total
No formal education	5 (35.7)	9 (64.3)	14 (100.0)
Primary	3 (42.9)	4 (57.1)	7 (100.0)
Secondary	33 (49.3)	34 (50.7)	67 (100.0)
Tertiary	348 (84.5)	64 (15.5)	412 (100.0)
Total	389 (100.0)	111 (100.0)	500 (100.0)

Yates Chi square (χ^2) value=55.353; $df=3$; $P=0.000$

Table 8: Relationship between respondents' knowledge of antenatal blood donation and their willingness to support antenatal blood donation

Knowledge	Willingness to support antenatal blood donation		
	Yes	No	Total
Good knowledge (8-17)	268 (89.3)	32 (10.7)	300 (100.0)
Poor knowledge (0-7)	39 (19.5)	161 (80.5)	200 (100.0)
Total	307 (61.4)	193 (38.6)	500 (100.0)

Chi square (χ^2) value=13.185; df=1; $P=0.001$

DISCUSSION

In this study, the ages of the respondents ranged from 20 to 59 years, with a mean of 39.2 ± 6.9 years. Lower age range and mean age were found in the Abakaliki study,^[10] Nigeria where the mean age of participants was 26 ± 4 years with a range of 21–50 years. This could be due to the varying sociocultural factors that influence age at marriage across the different geographical zones of Nigeria.

Awareness of blood donation generally and antenatal blood donation, in particular, was quite high among the study population. This was similar to other studies in Nigeria^[1,10] where all the respondents were aware of blood donation. The mass media, particularly, radio, has remained an age long source of health information to the public in most developing countries. With regards to general blood donation, majority of the respondents were aware through the mass media. This was consistent with the finding in Iran^[11] where majority of blood donation information was obtained through the radio. Strikingly, most of the respondents in this study heard of antenatal blood donation through interaction with health workers and through friends, while the media was the source of information for a lesser number of the study population. The implication of this is that the public enlightenment on antenatal blood donation is suboptimal, and most people become aware of blood donation only if they have had cause to come to the hospital or have interacted with friends who had.

Awareness through the spouse was the lowest means of information on antenatal blood donation in the study group. This portends that wives hardly discuss antenatal issues with their husbands as only 3.6% of the respondents got awareness about antenatal blood donation through their wives in this population. This observation is in consonance with the finding by Olayemi *et al.*^[12] in Ibadan that antenatal attendees do not think that their husbands need to either attend antenatal clinics with them or participate in counselling sessions.

Bleeding at any gestational age could be significant enough to warrant blood transfusion. Abortions and ruptured ectopic gestation are common causes in early pregnancy while antepartum/postpartum haemorrhages and operative deliveries are common indications for blood transfusion at advanced pregnancy stages. Anaemia and haemoglobinopathies are the other common indications for blood transfusion in this environment. Knowledge on the conditions in pregnancy that may require blood transfusion was quite high as a majority of the respondents knew that blood shortage and bleeding in

pregnancy are conditions that could result in blood transfusion in pregnant women.

The reason for this could be the high level of interactions with health workers or friends who have interacted with health workers for this study population. These interactions due to personal experiences or experiences of others could have served as a source of information for this study group. Abortion was not well known by the respondents as a condition that could require blood transfusion in pregnant women. This is probably due to the fact that most spontaneous abortions can now be safely and effectively managed with manual vacuum aspiration with very low complication rates.^[13]

Not everyone is eligible to donate blood and this is known by almost all the respondents with more than two-thirds of them being able to mention at least one condition in which an individual is not eligible to donate. This finding was also similar to the Iranian study^[11] where a good number of the study population knew about deferral factors for blood donation. The most suitable blood for transfusion is the voluntary non-remunerated blood from the low-risk population.^[14] This study, however, revealed the gross misconception by majority of the respondents that direct family blood donation on request is the best method to source for blood for pregnant women as less than a quarter of the respondents agreed that voluntarily donated blood could be used.

Voluntary non-remunerated blood donation is uncommon in this environment.^[1,15] Studies in Lithuania,^[16] Nigeria,^[1,15] and Sanguinea, Granada^[17] among blood donors have shown that people will most likely donate blood if there were some monetary gains or other benefits to be derived from it. With regards to obstetric services, insisting on compulsory antenatal blood donation by the patients' spouses may be an easy way to continue to obtain adequate blood supply to manage obstetric facilities. This is, however, not foolproof because not all the spouses will be eligible to donate blood. Hence, the wisdom of encouraging voluntary blood donation from the low-risk population in the society is welcome development.

In this study, men who had formal education were more willing to donate blood compared to those with no formal education. This is probably due to their better understanding of the importance of the availability of blood for improving maternal health and reducing maternal mortality. This finding was similar to those of Obi^[10] and Javadzadeh Shahshahani *et al.*^[11] where the more educated men were more willing to donate blood than their counterparts with no formal education.

CONCLUSION

Majority of the respondents have good knowledge, positive attitude and demonstrated a high level of willingness to donate blood for antenatal services. However, there is an urgent need to transform these positive attitudes into action. This can be achieved through continual public enlightenment, through the mass media, emphasizing the role of voluntary antenatal blood donation in reducing maternal mortality in Nigeria.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

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