

Explanatory factors with knowledge, attitude, and practice of voluntary blood donation

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ABSTRACT

Background: Voluntary non-remunerated blood donation practice in Nigeria needs to be clarified, considering the current increasing requirement for blood transfusion. **Objectives:** The objectives of the study were to evaluate explanatory factors of knowledge, attitude, and practice of voluntary blood donation among people in Ondo South senatorial district Ondo State, Nigeria. **Materials and Methods:** Three hundred and eighty-four residents were recruited purposively, using stratified and convenience sampling techniques with a pre-tested questionnaire used for the survey. **Results:** Of the 384 patients recruited into the study, 50.3% were between ages 18 and 39 years; mostly married (84.4%); predominantly with tertiary education (52%); and mostly self-employed (67.4%). Knowledge about voluntary blood donation was poor (mean score 8.4) despite 74.5% claimed awareness of voluntary blood donation. Attitude was good (mean score 8.0). Most respondents (88.5%) did not consider religion a barrier to blood donation. Practice was poor (mean score 0.59). Only 16.9% have donated blood before and 23.1% of this did voluntary blood donation. Education and age made significant differences in knowledge and attitude but not with practice. Occupational factor and religion made no significant difference in knowledge, attitude, and in practice, but marital status did on knowledge. **Conclusion:** There is good awareness of voluntary blood donation and a positive attitude however practice lags considerably in practice. Misconceptions about blood donation needs to be addressed, while efforts should be made by stakeholders toward educating the populace on the need to voluntarily donate blood.

KEY WORDS: Attitude; Knowledge; Practice; Voluntary Blood Donation


INTRODUCTION

Blood and blood product transfusion is known to be a life-saving procedure; however, millions of people in need of blood transfusion do not have access to timely transfusion. The demand for blood outweighs its supply due to the scarcity of voluntary blood donors^[1] as it occurs in many developing

countries like Nigeria. Blood donation and transfusion services are crucial for saving lives in obstetric emergencies, road traffic injuries, acquired/inherited hematological disorders, malignancies, and major surgical procedures.^[2]

The continuous availability of blood is important for effective health-care delivery. Blood donation practice is still shrouded with a lot of challenges in Nigeria. Family (replacement) and paid donors continue to be the common source of blood donation, compared with voluntary non-remunerated blood donation.^[3] This has dire consequences for the survival of patients requiring immediate blood transfusion.

Voluntary non-remunerated blood donors are considered to be the safest type of blood donors due to the reduced risk

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of transferring transfusion-transmissible infections to the recipients.^[4] Blood safety can only be assured with an ample supply of regular voluntary non-remunerated donors. The World Health Organization (WHO) has a target to achieve 100% voluntary non-remunerated blood donation by 2020^[3] in all nations of the world. It is yet to be determined if Nigeria will be able to meet up with the declaration of this target by the WHO.

There is a need to consider these factors of knowledge and attitude hypothesized to underwrite the practice of voluntary blood donation among our population. The objective of this study, therefore, was to explore the hypothesized explanatory factors of knowledge and attitude to practice of voluntary blood donation among residents of Ondo State, South-Western Nigeria. This might help to inspire the recruitment of voluntary blood donors for health-care facilities, thus increasing the pool of available blood donors, thereby meeting up with the increasing demand for blood in health-care practice.

MATERIALS AND METHODS

This cross-sectional study was conducted at the State Specialist Hospital Okitipupa, South-West, Nigeria, with 384 participants age 18 and above attending the outpatient department, consecutively recruited through purposive and stratified sampling techniques. The study was conducted from April 2018 to July 2018. Pre-tested questionnaires were used in data collection. The questionnaires were administered by the principal investigator and other researchers trained on data collection for this study. The researchers had a face to face interview with respondents for the administration of the questionnaires. Informed consent was obtained from the respondents. Ethical clearance was obtained from the Research and Ethical Committee of the Institution. Data were analyzed through SPSS version 23 using descriptive mean scores and simple percentages, and analysis of variance of mean scores to determine significant difference at $P = 0.05$.

RESULTS

Table 1, on the demography of the respondents, shows that 50.3% were between 18 and 39 years old; the respondents were predominantly married (84.4%) and more than half (52%) had tertiary education.

Table 2 respondents' knowledge of voluntary blood donation indicates that 74.5% were aware of voluntary blood donation, but only 44% knew voluntary blood donor as the best source of blood donation while just 15.9% knew the required blood volume at donation. Only 2.3% knew how frequently one can donate blood, while 29.4% knew possible problem(s) associated with blood donation. The mean score for their knowledge of voluntary blood donation was 8.4 [Table 3].

Results on the attitude of the respondents toward blood donation are depicted in Table 4. Sixty-three point five

Table 1: Demography of respondents

Parameters	Frequency	Percent
Gender		
Male	192	50.0
Female	192	50.0
Total	384	100.0
Age		
18–28 years	79	20.6
29–39 years	118	30.7
40–50 years	145	37.8
>50 years	42	10.9
Total	384	100.0
Marital status		
Single	42	10.9
Married	324	84.4
Divorced	12	3.1
Widowed	6	1.6
Total	384	100.0
Occupation		
Civil servant	84	21.9
Self-employed	259	67.4
Unemployed	41	10.7
Total	384	100.0
Level of education		
Tertiary	200	52.0
Secondary	123	32.0
Primary	42	11.0
No formal education	19	5.0
Total	384	100.0
Religion		
Christian	352	91.7
Muslim	25	6.5
Traditional	7	1.8
Total	384	100.0

(63.5%) of respondents felt that voluntary blood donation is a good practice. Most of the respondents (88.5%) indicated that their religious belief is not against blood donation and 70.1% did not see any problem with blood donation; only 16.7% thought that regular blood donation is beneficial and just 28.9% were willing to be recruited for voluntary blood donation. The attitudes mean score was 8.0 [Table 3].

Table 3 shows mean scores for knowledge, attitude, and practice.

Figure 1 illustrates the practice of blood donation among the respondents. The mean score for practice of voluntary blood donation was 0.59 [Table 3].

Knowledge, attitude, and practice of voluntary blood donation were compared based on gender, level of education, age,

Table 2: Knowledge about blood donation

Parameters	Frequency	Percent
I am aware of voluntary blood donation		
Yes	286	74.5
No	98	25.5
Total	384	100.0
Best source of blood donor is?		
Voluntary donor	169	44.0
Replacement donor	73	19.0
Remunerated donor	25	6.5
I do not know	117	30.5
Total	384	100.0
Required blood volume at donation is?		
100 ml	16	4.2
450 ml	61	15.9
500–1000 ml	7	1.8
>1000 ml	2	0.5
I do not know	298	77.6
Total	384	100.0
Are there problem(s) associated with blood donation?		
Yes	113	29.4
No	269	70.1
I do not know	2	.5
Total	384	100.0
How frequently can you do blood donation?		
Every 3 months	10	2.6
Every 6 months	9	2.3
Yearly	39	10.2
I do not know	326	84.9
Total	384	100.0
Regular blood donation is beneficial to the donor		
Yes	131	34.1
No	202	52.6
I do not know	51	13.3
Total	384	100.0

Table 3: Knowledge, attitude, and practice of voluntary blood donation in simple mean scores

Parameters	N	Mean	Std. deviation
Knowledge	384	8.4219	6.14004
Attitude	384	8.0469	6.20123
Practice	384	.5859	4.45796

occupation, marital status, and religion. Results are shown in Tables 5-10.

Table 5 shows that males had higher mean scores (9.2) for knowledge, attitude (7.1), and practice (2.6) than females with significant differences for knowledge ($F = 4.924, P < 0.05$) and attitude ($F = 4.296, P < 0.05$) but with no significant difference for practice ($F = 1.109, P > 0.05$).

Table 4: Attitude toward blood donation

Parameters	Frequency	Percent
What do you feel about the practice of blood donation?		
Good	244	63.5
Bad	36	9.4
Neutral	104	27.1
Total	384	100.0
Is your religious belief against blood donation		
Yes	38	9.9
No	340	88.5
Neutral	6	1.6
Total	384	100.0
Is there problem(s) with blood donation?		
Yes	113	29.4
No	269	70.1
I do not know	2	.5
Total	384	100.0
Regular blood donation is beneficial to the donor?		
Yes	65	16.7
No	140	36.5
I do not know	179	46.6
Total	384	100.0
Will you be willing to be recruited for voluntary blood donation?		
Yes	112	28.9
No	272	70.8
Total	384	100.0

Table 5: Knowledge, attitude, and practice of voluntary blood donation based on gender

Parameters	Mean	Std. deviation	Std. error
Knowledge			
Male	9.1556	2.13153	0.31775
Female	7.7143	2.09132	0.55893
Attitude			
Male	7.1064	1.30473	0.08511
Female	6.8231	1.29117	0.10649
Practice			
Male	2.5556	0.89330	0.13316
Female	1.2857	0.61125	0.16336

Knowledge ($F=4.924, P<0.05$), attitude ($F=4.296, P<0.05$), practice ($F=1.109, P>0.05$).

Respondents with tertiary education got higher mean score in knowledge (11.3), attitude (7.6), and practice (3.6) [Table 6]. There was significant differences in knowledge ($F = 4.050, P < 0.05$) and attitude ($F = 3.863, P < 0.05$) but no significant difference in practice of voluntary blood donation ($F = 0.628, P > 0.05$).

The 25–59 years age group had higher mean scores in knowledge (8.6) but seconded to the 18–24 years age group in attitude and had approximately the same score for practice of

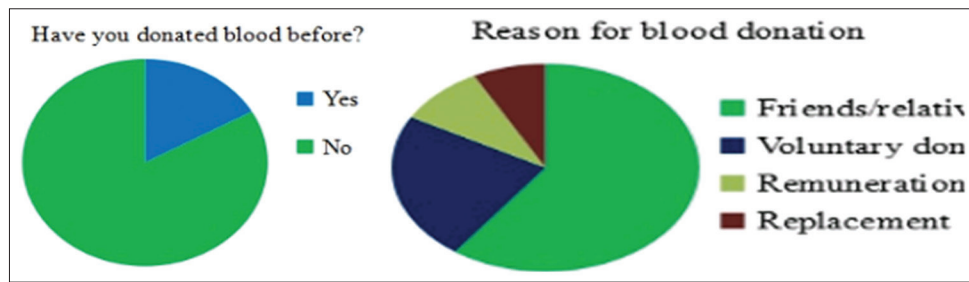


Figure 1: Illustrate the practice of blood donation

Table 6: Knowledge, attitude, and practice based on the level of education

Parameters	Mean	Std. deviation	Std. error
Knowledge			
Tertiary	11.2500	1.50000	0.75000
Secondary	8.5714	1.73052	0.32704
Primary	8.3043	2.49426	0.52009
No education	6.0000	3.15470	0.67735
Attitude			
Tertiary	7.5581	1.36804	0.20862
Secondary	7.3750	1.45488	0.36372
Primary	6.9609	1.43303	0.12666
No education	6.8667	1.15440	0.08267
Practice			
Tertiary	2.6429	0.82616	0.15613
Secondary	2.3478	0.93462	0.19488
Primary	2.2500	0.50000	0.25000
No education	2.5000	0.57735	0.28868

Table 7: Knowledge, attitude, and practice of voluntary blood donation based on age

Parameters	Mean	Std. deviation	Std. error
Knowledge (years)			
18–28	7.0000	2.15037	0.29538
29–39	8.6226	2.19305	0.28551
40–50	2.3000	0.79438	0.14503
>50	2.0000	0.73205	0.00000
Attitude (years)			
18–28	7.8182	1.68550	0.29341
29–39	6.9515	1.23429	0.06795
40–50	6.2500	1.29099	0.32275
>50	2.5556	1.01125	0.00125
Practice (years)			
18–28	2.4915	0.83816	0.10912
29–39	2.5472	0.86749	0.11916
40–50	2.2500	0.70711	0.50000
>50	2.0000	0.00000	0.00000

Knowledge ($F=4.050, P<0.05$), attitude ($F=0.863, P<0.05$), practice ($F=0.628, P>0.05$)

Knowledge ($F=2.935, P<0.05$), attitude ($F=6.506, P<0.05$), practice ($F=0.756, P>0.05$)

voluntary blood donation [Table 7] with the group. There was significant differences in knowledge ($F = 2.935, P < 0.05$) and attitude ($F = 6.506, P < 0.05$) but none in practice ($F = 0.756, P > 0.05$) among the age groups.

The unemployed respondents had higher scores in knowledge (9.0), attitude (7.1), and practice (3.3) followed by Civil servants. There were no significant differences among the groups in (knowledge [$F = 0.043, P > 0.05$], attitude [$F = 1.752, P > 0.05$] and practice [$F = 2.735, P > 0.05$]).

Table 9 shows no significant differences detected in knowledge ($F = 0.515, P > 0.05$), attitude ($F = 0.047, P > 0.05$), and practice ($F = 2.316, P > 0.05$) based on religion.

Table 10 respondents that were single had higher mean score for knowledge (9.9) and attitude (7.1), but the married were higher in practice (single = 2.2; married = 2.6). There was significant difference in knowledge ($F = 4.009, P = 0.05$) but none was observed in attitude ($F = 1.282, P > 0.05$) and practice of voluntary blood donation ($F = 2.314, P > 0.05$).

DISCUSSION

Voluntary blood donors are judged to be at low risk of transfusion-transmissible infections; thus, their recruitment and retention are important in ensuring safe blood transfusion practice.^[3] The findings of this study indicate that despite a good attitude, the respondents have poor knowledge and practice of voluntary blood donation.

Poor knowledge of respondents, as was observed in this study, is similar to findings by Kittu *et al.* in Puducherry, India^[5] where the majority of the respondents had inadequate knowledge of blood donation. Respondents’ level of awareness of blood donation was high (74.5%). This is similar to findings by Salaudeen *et al.*^[6] in North-central Nigeria and studies done in South-West Nigeria^[7] and in Mekelle City, Northern Ethiopia^[8] where 96.9% and 85.5% of participants indicated awareness of voluntary blood donation. Less than half of the respondents in this current study knew voluntary blood donors as the best source of donors; less than one-fifth knew the volume of blood to be donated and only 2.3% knew how frequently blood donation should be done even though up to 84% had secondary and tertiary education. These

Table 8: Knowledge, attitude, and practice of voluntary blood donation based on occupation

Parameters	Mean	Std. deviation	Std. error
Knowledge			
Civil servant	8.8846	1.88312	0.36931
Self-employed	8.7333	2.51798	0.45972
Unemployed	9.0000	1.73205	1.00000
Attitude			
Civil servant	6.9796	1.10849	0.15836
Self-employed	6.8108	1.17174	0.11122
Unemployed	7.0946	1.39976	0.09395
Practice			
Civil servant	2.6154	0.85215	0.16712
Self-employed	2.3000	0.79438	0.14503
Unemployed	3.3333	0.57735	0.33333

Knowledge (F=0.043, P>0.05), attitude (F=1.752, P>0.05), practice (F=2.735, P>0.05)

Table 9: Knowledge, attitude, and practice of voluntary blood donation based on religion

Parameters	Mean	Std. deviation	Std. error
Knowledge			
Christianity	9.2500	2.54951	0.90139
Islam	8.8136	2.19305	0.28551
Traditional	8.6939	2.18140	0.31163
Attitude			
Christianity	7.0029	1.28541	0.06881
Islam	6.9974	1.30515	0.06678
Traditional	6.9200	1.46969	0.29394
Practice			
Christianity	3.0000	1.30931	0.46291
Islam	2.3878	0.73076	0.10439
Traditional	2.4915	0.83816	0.10912

Knowledge (F=0.515, P>0.05), attitude (F=0.047, P>0.05), practice (F=2.316, P>0.05)

might explain the poor practice of blood donation among the respondents. The respondents had a positive attitude toward blood donation. This is similar to findings by Razdan *et al.*^[9] and Meinia *et al.*^[10] who reported a positive attitude of respondents toward the donation of blood in their respective studies. In this study, 88.5% indicated that their religious belief is not against blood donation. This is in contrast to the findings of Asamoah-akuok *et al.*^[11] and Okpara *et al.*^[12] which showed religious belief as a constraint to blood donation. Only 28.9% of the respondents in this study were willing to be recruited for voluntary blood donation. This is in contrast to the findings of Razdan *et al.*^[9] and Meinia *et al.*^[10] where the majority (83.5%) and (74%) of their respondents were willing to donate blood in the future, but similar to findings of Kittu *et al.*^[5] who found just 39.7% of the respondents willing to be donors in the future. Despite a fairly good awareness and positive attitude, the practice of blood donation was extremely poor. Only 16.9% of respondents had ever donated blood before. This finding is similar to those

Table 10: Knowledge, attitude, and practice of voluntary blood donation based on marital status

Parameters	Mean	Std. deviation	Std. error
Knowledge			
Single	9.9167	2.02073	0.58333
Married	8.5319	2.16545	0.31586
Attitude			
Single	7.1154	1.43696	0.19927
Married	6.9938	1.28379	0.07121
Divorced	6.3333	1.15470	0.66667
Widowed	5.5000	0.70711	0.50000
Practice			
Single	2.1667	0.38925	0.11237
Married	2.5745	0.90277	0.13168

Knowledge (F=4.009, P=0.05), attitude (F=1.282, P>0.05), practice (F=2.314, P>0.05)

from Trinidad and Tobago,^[13] Dhaka, Bangladesh,^[14] India,^[15] and Nigeria^[16] where only 18.8%, 16%, 10.8%, and 15.3% of the participants, respectively, have donated blood before. It, however, contrasts with studies done among the Yazd community in Iran (where 38% had prior blood donation),^[17] North-west, Ethiopia,^[18] and in India.^[10] The findings of this study further revealed that male participants had greater knowledge, attitude, and practice of voluntary blood donation compared with females with significant differences. This finding is similar to those of Hossain *et al.*^[19] and Shailesh *et al.*^[20] who found higher donors with males. The age group 29–39 years had greater knowledge and better attitude with significant differences, but all the groups showed poor practice with no significant differences. This finding contrasts with Rahman *et al.* study which declared that people between the 24 and 35 years age group were the significant blood donors.^[21] The singles (unmarried) had greater knowledge and attitude, but the married was higher in practice. There were no significant differences in knowledge and practice, but there was in attitude. Young people are the most feasible blood donors in every society.^[22] Young and educated people are safer blood donors since the residual risk of transfusion-transmissible infections is assumed to be lower in this population.^[23] World health organization also insists on focusing on young people, to achieve 100% voluntary unpaid blood donation.^[24] It is, however, understandable that the married in this study had a better practice of blood donation. According to Getachew *et al.*,^[18] the older age group was about 2 times more likely to donate blood when compared to the younger ones. This might be due to the fact that older people have faced different problems in their family lives which might have motivated them to donate blood.^[18] Respondents with tertiary education had greater knowledge and attitude with significant differences but with no significant difference in practice. This finding is coherent with a report from a study in Saudi Arabia, which stated that the level of knowledge about blood donation increased progressively with increase in educational level.^[25] Christians had higher knowledge and practice than Muslims and the traditionalists, but they all had approximately the same attitude toward blood donation. This

result agrees with information from the US National Survey of Family Growth, which declared no relationship between blood donation and religiosity.^[26]

A limitation to this study was the assessment instrument which might not have drawn comprehensive information regarding knowledge and attitude toward voluntary blood donation. Furthermore, knowledge, attitude, and practice of voluntary blood donation were considered outside the background of any behavioral/health-seeking theory.

CONCLUSION

Despite a positive attitude toward voluntary blood donation, there is poor knowledge and practice lags considerably. There is a need for stakeholders to increase the knowledge of the populace about voluntary blood donation through increased advocacy using the mass media and social media. Recruitment and retention of regular donors through regular reminders and incentives such as free medical check-up might brew attitudinal change strong enough to motivate voluntary blood donation, thus bridging the gap between knowledge/attitude and practice of voluntary blood donation.

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