

Knowledge Level, Attitude and Practice of Blood Transfusion among Caregivers attending the Paediatric Outpatient Clinic in the Rivers State University Teaching Hospital, Nigeria

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DOI: <https://doi.org/10.52403/ijhsr.20240624>

ABSTRACT

Background: Blood transfusion is a vital component of any health care system globally.

Aim: It was to ascertain knowledge level, attitude and practice of blood transfusion in children among caregivers.

Materials & Methods: It was a descriptive cross-sectional study carried out over 3 months in the Paediatric Outpatient Clinic of the hospital.

Results: Of 160 respondents, majority were 30-39 year olds 87(54.4%) with high socioeconomic class 54(37.5%). Majority defined blood transfusion correctly 113(89.4%), knew it saves lives 148(92.5%), procedure was safe 129(80.6%) but could have complications 120(75%). Most knew at least 2 complications of blood transfusion 81(50.6%). Most knew screening 139(86.9%) and compatibility test were done 139 (86.9%). Correct route of transfusion was known by most respondents 141(88.1%). Majority 136(85%) would consent to blood transfusion and 105(65.6%) would like to donate blood for use. Of 68 respondents whom blood transfusion had been prescribed for their child(ren), 55(80.9%) consented. The commonest reason for not giving consent was, their religion forbids it (36.4%) while the commonest reason for not donating blood was fear of not having sufficient blood (34%).

Majority had good knowledge (44.4%) with the commonest source of information being health workers/hospital. Mothers' level of education, fathers' level of education, fathers' occupation and socioeconomic status were significantly associated with good knowledge.

Conclusion: Majority of respondents had good knowledge, consented to blood transfusion and were willing to donate blood for transfusion. Increased health education other than from the hospitals will further improve the knowledge, attitude and practice of blood transfusion among caregivers.

Key words: Blood transfusion, Knowledge, Attitude, Practice, Children

INTRODUCTION

Blood transfusion is a procedure whereby blood or blood components are replaced in an individual in need of it via intravenous route.

It is a vital and essential aspect of any effective health care system in both adults and the paediatric age group with its' main goal being to save lives. There are several

indications of blood transfusions in the paediatric population, some of which are anaemia resulting from disease conditions like malaria, sepsis, parasitosis & disease modifying treatments (chemotherapy for cancers); blood loss following accidents, bleeding disorders or surgery, trauma or burns and disease conditions such as sickle cell anaemia, thalassemia, leukaemia, aplastic anaemia etc.^[1,2] In addition, sick newborns especially premature babies also have need for blood transfusions.^[3] It is important to note that indications for blood transfusion vary from place to place as observed in a study among the paediatric age group in the United States of America (USA)^[4] where agranulocytosis and sickle cell crisis were the commonest indications for blood transfusion whereas in south-south^[5] and south-west^[6] Nigeria, malaria was documented as the commonest indication while in the south-east^[7] Nigeria, malignancy was the commonest indication observed.

Transfusion of blood may require several different components which includes red blood cells (RBC), white blood cells, plasma, platelets, albumin; the most frequently transfused blood component is the red blood cells.^[2,3] This was in consonance with a multi-centre study carried out in the USA^[4] where 60.2% of blood transfused was RBC corroborating with other studies in Nigeria.^[5-7]

Although blood transfusion is carried out in both children and adults, in low-income countries, about 65% of blood transfusions are done in children < 5 years while in high-income countries, ages > 65 years account for about 76% of blood transfusions.^[8] This high transfusion rate in the paediatric age group in low-income countries could be attributed to the high burden of malnutrition, infectious diseases, malaria and sickle cell anaemia.^[9] Also, children in intensive care units (ICU) are said to undergo more blood transfusions.^[10,11]

Prevalence of blood transfusion in the Paediatric age group varies with age, geographic locations and over time. A 2-year

nonconcurrent cohort study of under 18 years children carried out in Michigan, Washington DC involving 35 academic children hospitals revealed a blood transfusion rate of 4.8%.^[4] This was lower than the 8.6%-15.8% reported in various parts of Nigeria.^[5,6,12] This difference could be attributed to geographic and regional variability as well as varying disease pattern and the availability of other treatment options other than blood. The varying sample sizes could also contribute to the different prevalence rates as small sample sizes are known to lead to exaggerated prevalence rates. It is noteworthy that 15-50% of critically ill paediatric patients admitted in the ICU would require RBC transfusions.^[13] In addition, 40% of neonates who weigh 1000-1500g at birth and 90% with weight < 1000g may undergo up to 5 RBC transfusions during their stay in the hospital.^[14]

Blood transfusion is generally safe as blood donated are routinely screened for various diseases such as hepatitis B & C, HIV, syphilis etc and compatibility test carried out before been used. Despite these measures, blood transfusion carries its' own risk/complications which could be life threatening. These include red cell alloimmunization with acute or delayed hemolytic transfusion reaction, allergic reactions with hives or itching, fever and transfusion transmitted infections such as HIV, hepatitis etc.^[1,2] In Africa, infections play major role among the risk of blood transfusion.^[15] Ughasoro et al^[7] in south east Nigeria reported minor adverse transfusion events of 10% among children which was much higher than the 0.95% reported in the USA.^[4] This much lower risk of blood transfusion in the latter study could be because of their more advanced technological know-how in screening and compatibility testing. These complications can however be prevented, minimized and even managed if best practices are followed by both patients and healthcare providers.

Blood for transfusion is obtained from 3 groups of donors; voluntary non-remunerated donors, replacement donors

who donate blood for friends and family members and the commercial or paid donors. Of the above three, the safest blood is usually obtained from voluntary non-remunerated donors. It is pertinent to note that the willingness to donate blood varies from country to country as well as over time. Blood donation rate is much lower in low-income countries when compared to middle- and high-income countries being 4.0, 12.5 and 39.2 donations per 1000 populations respectively.^[8,16,17] In Nigeria, majority of donors are replacement and commercial donors with voluntary donors accounting for only about 8%.^[18,19]

Although blood transfusion is known to be a life saver and an indispensable component of medical management of several diseases in both routine and emergency situations, parents/caregivers may refuse to transfuse their children in need of blood/blood products. This usually poses a medical, legal and ethical dilemma on the part of the doctor or paediatrician. Reason for refusal of blood transfusion could range from religious reasons to ignorance of the importance and safety of blood transfusion. Thus, education of the populace on the importance of blood transfusion as well as its' safety would go a long way in improving the general acceptance of blood transfusion.

Several studies have been carried out on the knowledge, attitude and practice of blood donation in and outside Nigeria but that of blood transfusion in children among parents /caregivers is grossly understudied. A previous study^[20] on the knowledge of blood transfusion among health care providers showed low levels. To the best of our knowledge, no study has been carried out in our environment in this regard. Considering that lack of knowledge and attitude of caregivers towards blood transfusion remains a threat to this procedure, the present study is therefore carried out to ascertain parents/care-givers level of knowledge, attitude and practice of blood transfusion in children in Rivers State. Findings from this study would provide the basis for increased education of the populace on blood

transfusion, dissuade myths surrounding its' safety which would thus improve their attitude and practice towards blood transfusion. This would also improve the general acceptance of blood transfusion thereby improve childhood morbidity and mortality.

MATERIALS AND METHODS

This was a descriptive cross-sectional study carried out in the Paediatric outpatient clinic (POPC) of the Rivers State University Teaching Hospital (RSUTH), Nigeria over 3 months from 1st March to 31st May, 2023.

The Paediatric department is one of the clinical departments of the RSUTH, a government owned tertiary health centre which is a 375-bed hospital. It is located in the southern region of Nigeria and serve as a referral centre to all the Primary Health centres and secondary health centres in the 23 local government areas, private hospitals and neighbouring states. The other clinical departments are Obstetrics & Gynaecology, Surgery, Internal medicine, Pathology etc. The Paediatric outpatient clinic is open for consultation 5 days of the week, Mondays to Fridays 8am-4pm and it is run by consultants, resident doctors, house officers as well as nurses and other support staff such as the cleaners and clerks. It renders care to children 0 -17 years and sees an average of 35-40 children daily. Apart from the POPC, the Department of Paediatrics also consist of the children emergency room (CHER), paediatric wards and the special care baby unit.

Ethical clearance for this study was obtained from the Rivers State University Teaching Hospital Research Ethics Committee. Parents/caregivers were informed of the research being carried out, they were thoroughly educated and thereafter informed consent was obtained verbally from each participant. Parents/caregivers were reassured of the confidentiality of all the data obtained.

The study population was made up of parents/caregivers above 18 years old whose children were attending the paediatric

outpatient clinic.

The inclusion criteria were all parents/caregivers above age 18 years whose children were attending the POPC and gave consent to participate in the study whereas the exclusion criteria were all parents/caregivers 18 years or below or parents above 18 years who did not give consent to participate in the study.

A convenient sampling method was used and a total of 160 parents/caregivers who were eligible for the study were recruited.

A research assistant (a house officer) was recruited and trained on the proper administration of the pre-tested and validated questionnaire before commencement of the study. The questionnaire was administered directly on a one-on-one interview to the participants by the researcher and/or research assistant. The questionnaire consisted of 3 parts; the 1st section was on the biodata of the participants and questions to assess their socio-economic status using Oyedeki's classification.^[21] The 2nd section consisted of questions on knowledge on blood transfusion while the 3rd section consisted of questions on the attitude and practice of blood transfusion on children. Ten questions were used to assess the participants knowledge on blood transfusion while their attitude and practice sections had 2 questions each. The knowledge levels of the participants were assessed by assigning 10 marks each for every correct answer. A participant is said to

have good knowledge if a score of $\geq 70\%$ was obtained; fair knowledge if total score was 50-69% and poor knowledge if total score was below 50%. Wrong answers were scored as zero.

Data was extracted from the questionnaire into an Excel sheet and analysis was done using the statistical package for social sciences (SPSS) version 23. The socio-demographic characteristics of the participants were reported in frequencies and percentages. Other results were presented as pie and bar charts while the association between knowledge level and socio-demographic characteristics was established using Fishers Exact test, and its *P*-values were recorded. Statistical significance was set at *P*-values ≤ 0.05 .

RESULT

Socio-demographic characteristics of the study population

Of 160 respondents, most were of age group 30-39 years 87 (54.4%), female respondents 125 (78.1%), married 139 (86.9%) and from South-south geo-political zone of the country 103 (64.4%). Parents had mainly tertiary education {mothers 93(58.1%); fathers 97(60.6%)} and engaged in business/trading {mothers 58(36.3%); fathers 59(26.9%)}. Most families were of high social status 60 (37.5%), Table I.

Table I: Socio-demographic characteristics of the study population

Variables	Frequency, n = 160 (%)
Age group (years)	
20-29	40 (25.0)
30-39	87 (54.4)
40-49	33 (20.6)
Sex	
Male	35 (21.9)
Female	125 (78.1)
Marital status	
Married	139 (86.9)
Single	9 (5.6)
Separated	4 (2.5)
Co-habiting	8 (5.0)
Geo-political zone	
South south	103 (64.4)
South east	42 (26.2)
South west	9 (5.6)
North	6 (3.8)
Religion	
Christianity	154 (96.2)
Islam	6 (3.8)

Mothers' level of education	
Nil	8 (5.0)
Primary	9 (5.6)
Secondary	50 (31.3)
Tertiary	93 (58.1)
Mothers' occupation	
Business/Trading	58 (36.2)
Civil/Public servant	34 (21.3)
Professionals	16 (10.0)
Artisans	21 (13.1)
Unemployed/students/house wives	31 (19.4)
Fathers' level of education	
Nil	6 (3.8)
Primary	12 (7.5)
Secondary	45 (28.1)
Tertiary	97 (60.6)
Fathers' occupation	
Business/Trading	59 (26.9)
Civil/Public servant	33 (20.6)
Professionals	30 (18.8)
Artisans	32 (20.0)
Unemployed	6 (3.7)
Socio-economic status	
Low	54 (33.8)
Middle	46 (28.7)
High	60 (37.5)

Knowledge of blood transfusion by respondents

Majority of the respondents had heard of blood transfusion 153 (95.6%), defined blood transfusion correctly 143 (89.4%), listed at least one indication of blood transfusion 113 (70.6%) but less respondents knew that children < 5 years were most at risk of blood transfusion 70 (43.8%). Most respondents knew that blood transfusion

saves lives 148 (92.5%), blood transfusion was safe 129 (80.6%) and may have complications 120 (75.0%). More respondents knew at least 2 complications of blood transfusion 81 (50.6%) while most knew the blood should be screened before transfusion 139 (86.9%), compatibility test done before transfusion 139 (86.9%) and identified the correct route of blood transfusion 141 (88.1), Table II.

Table II: Knowledge of blood transfusion by respondents

Variables	Frequency, n = 160 (%)
Heard of blood transfusion	
Yes	153 (95.6)
No	7 (4.4)
Defined blood transfusion correctly	
Yes	143 (89.4)
No	17 (10.6)
Listed at least 1 indication of blood transfusion	
Yes	113 (70.6)
No	47 (29.4)
Knew children < 5 years are most at risk	
Yes	70 (43.8)
No	90 (56.2)
Knew that blood transfusion can save lives	
Yes	148 (92.5)
No	12 (7.5)
Knew that blood transfusion is safe	
Yes	129 (80.6)
No	31 (19.4)
Knew blood transfusion may have complications	
Yes	120 (75.0)
No	40 (25.0)
Knew at least 2 complications of blood transfusion	
Yes	81 (50.6)
No	79 (49.4)
Knew that blood is screened before transfusion	
Yes	139 (86.9)
No	21 (13.1)
Knew that blood is tested for compatibility before transfusion	
Yes	139 (86.9)

No	21 (13.1)
Knew the correct route for blood transfusion	
Yes	141 (88.1)
No	19 (11.9)

Sources of information

The commonest source of information was from health workers/hospital 123 (82.0%) while the least was from relatives 16 (10.7%), Figure 1.

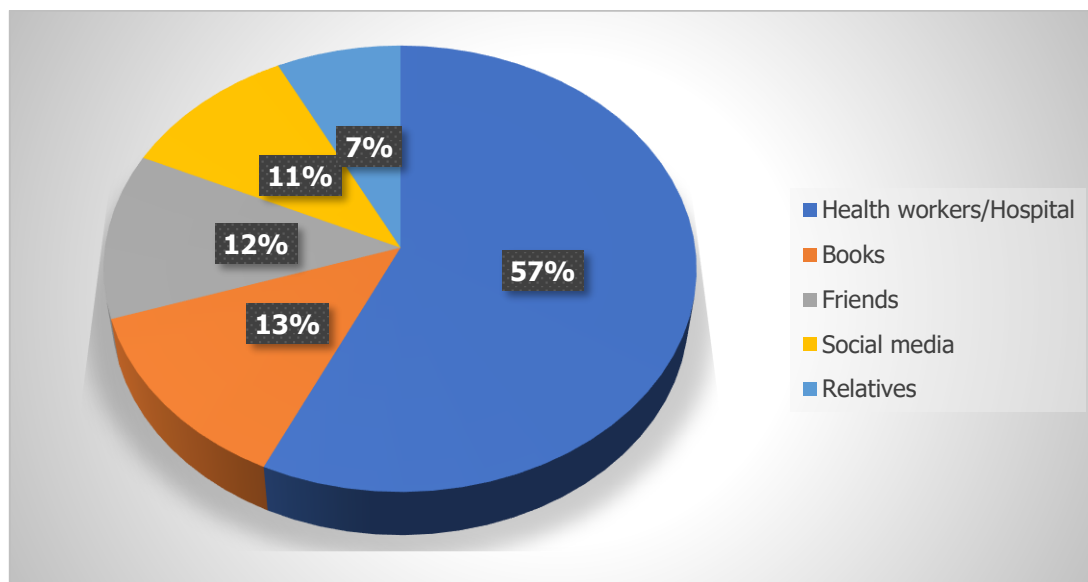


Figure 1: Sources of information

Attitude and practice of blood transfusion by respondents

Majority of the respondents would consent to blood transfusion for their children if the need arose 136 (85.0%) and would donate the blood being used for transfusion 105 (65.6%).

Blood transfusion was not prescribed as a form of treatment to most of the respondents' children 92 (57.5%). Of 68 respondents in whom blood transfusion was prescribed, majority consented to blood transfusion and were transfused 55(80.9%). Out of the 55 respondents' children transfused, 9(16.4%) had blood transfusion reaction, Table III.

Table III: Attitude and practice of blood transfusion by respondents

Variables	Frequency, n = 160 (%)
Attitude	
Would consent to blood transfusion	
Yes	136 (85.0)
No	24 (15.0)
Would like to donate blood for transfusion	
Yes	105 (65.6)
No	55 (34.4)
Practice	
Blood transfusion ever prescribed for child	
Yes	68 (42.5)
No	92 (57.5)
Consented to blood transfusion, n = 68	
Yes	55 (80.9)
No	13 (19.1)
Child had blood transfusion reaction(s), n = 55	
Yes	9 (16.4)
No	46 (83.6)

Reasons for not consenting to blood transfusion

The commonest reason for not consenting to blood transfusion was that their religion

forbids it 4 (36.4%) and had no reasons 4 (36.4%) while the least did not believe in blood transfusion 2 (18.2%), Figure 2.

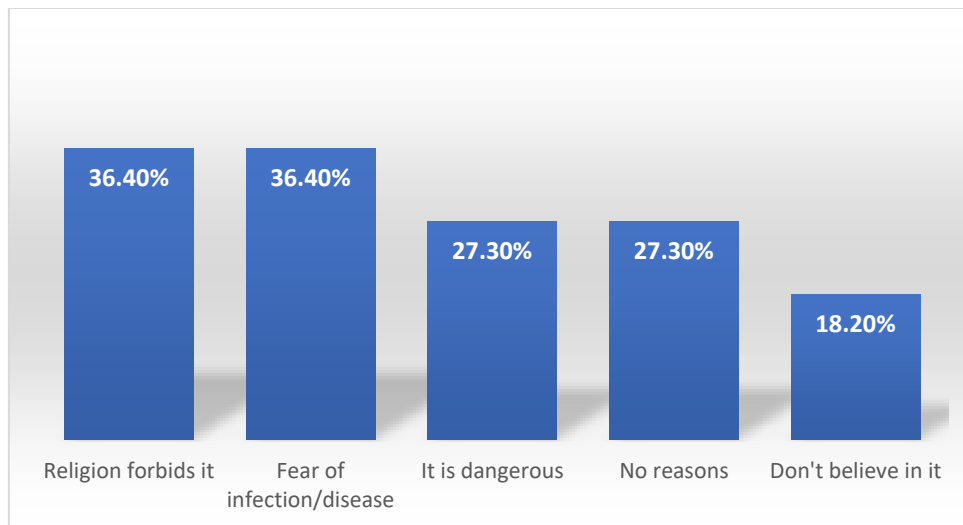


Figure 2: Reasons for not consenting to blood transfusion

Reasons for refusing to donate blood for transfusion

The commonest reason for refusing to donate blood for transfusion was the fear of not

having sufficient blood 18 (34.0%) followed by fear of donating ones' blood 12 (22.6%) while the least was the fear of the needle/procedure 4 (7.5%), Figure 3.

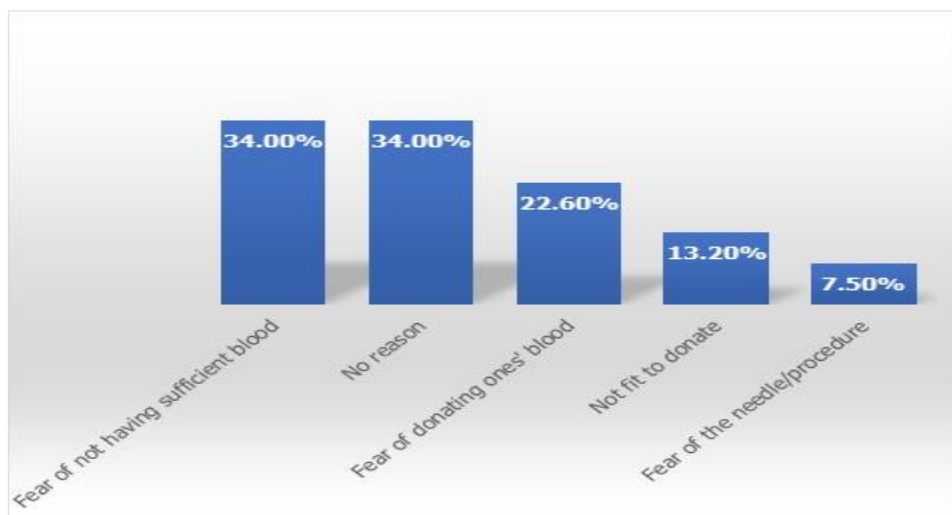


Figure 3: Reasons for refusal to donate blood

Sources of blood for transfusion

The source of blood for transfusion was majorly by the parents (father/mother) 24 (43.6%) and commercial donors 24 (43.6%), Figure 4.

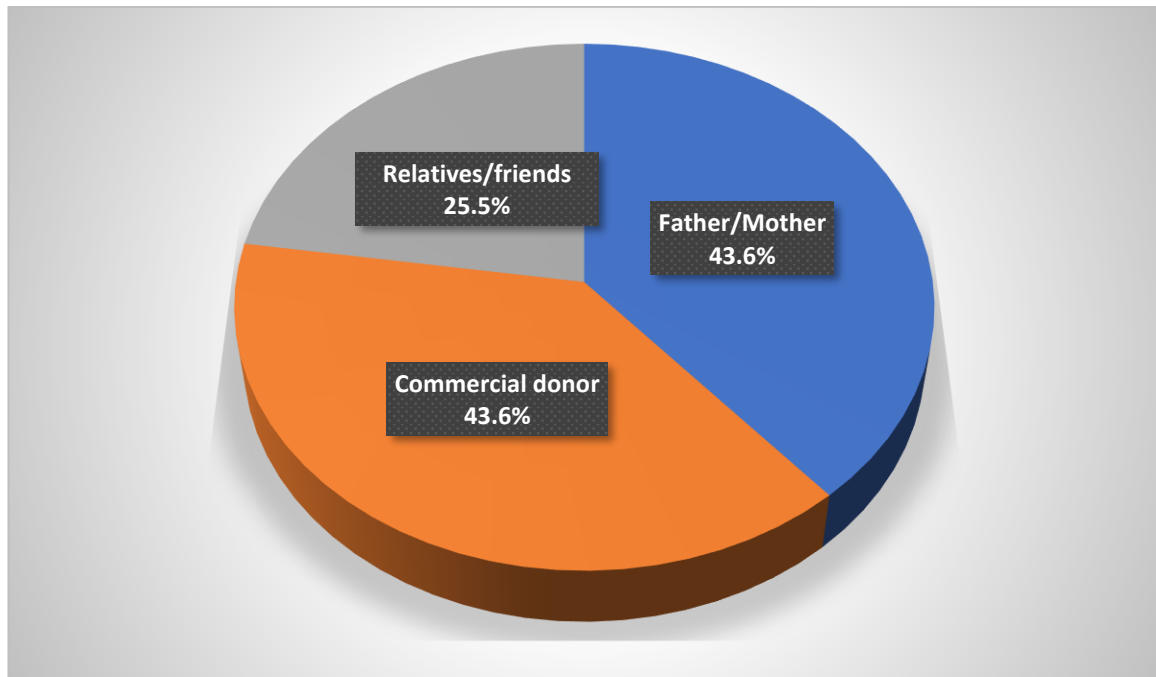


Figure 4: sources of blood transfusion

Level of knowledge of blood transfusion among caregivers

Majority of caregivers had good knowledge of blood transfusion in children 71(44.4%) while the least had poor knowledge 22(13.7%), Figure 5.

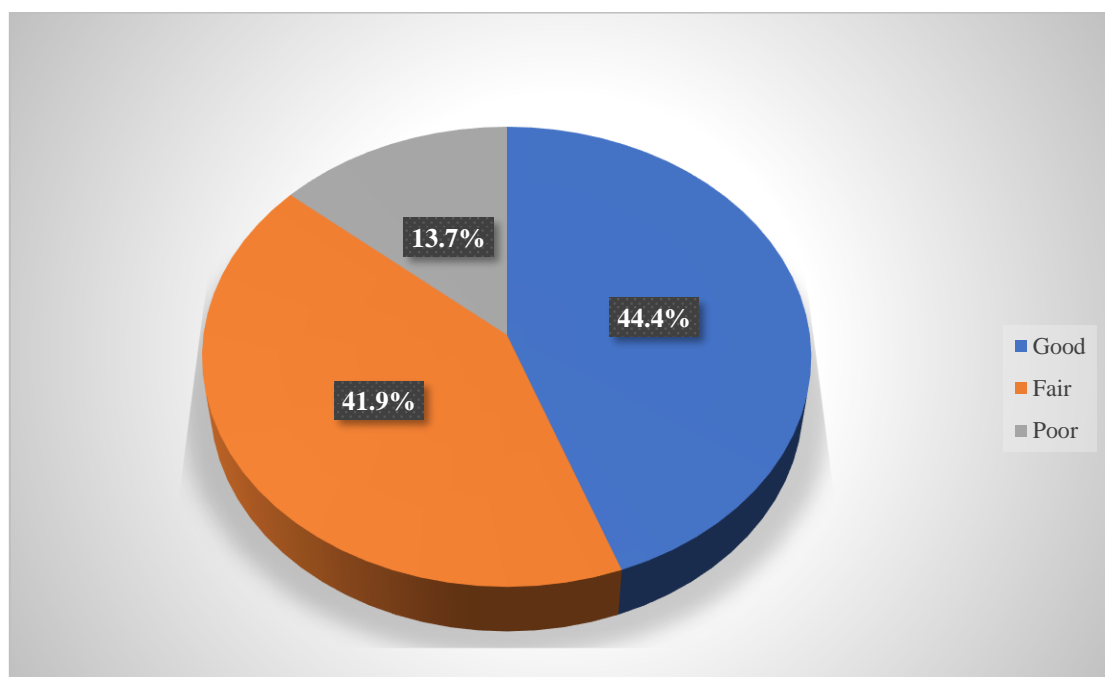


Figure 5: Level of knowledge of blood transfusion among caregivers

Association between socio-demographic characteristics and knowledge level

Mothers' level of education, fathers' level of education, fathers' occupation and

socioeconomic status were significantly associated with their knowledge level (P value 0.004, 0.008, 0.008, < 0.001), Table IV.

Table IV: Association between socio-demographic characteristics and knowledge level

Variables	Knowledge level			P Value
	Good, n (%)	Fair, n (%)	Poor, n (%)	
Age group (years)				
20-29	15 (21.1)	19 (28.4)	6 (27.3)	0.868
30-39	41 (57.7)	35 (52.2)	11 (50.0)	
40-49	15 (21.1)	13 (19.4)	5 (22.7)	
Sex				
Male	15 (21.1)	13 (19.4)	7 (31.8)	0.454
Female	56 (78.9)	54 (80.6)	15 (68.2)	
Marital status				
Married	66 (93.0)	54 (80.6)	19 (86.4)	0.113
Single	3 (4.2)	6 (9.0)	0	
Separated	1 (1.4)	3 (4.5)	0	
Cohabiting	1 (1.4)	4 (6.0)	3 (13.6)	
Mothers' level of education				
Nil	2 (2.8)	4 (6.0)	2 (9.1)	0.004*
Primary	2 (2.8)	3 (4.5)	4 (18.2)	
Secondary	18 (25.4)	21 (31.3)	11 (50.0)	
Tertiary	49 (69.0)	39 (58.2)	5 (22.7)	
Mothers' occupation				
Business/Trading	22 (31.0)	25 (37.3)	11 (50.0)	0.243
Civil/Public servant	13 (18.3)	18 (26.8)	3 (13.1)	
Professionals	12 (16.9)	4 (6.0)	0	
Artisans	9 (12.7)	8 (11.9)	4 (18.2)	
Unemployed/students/HW	15 (21.1)	12 (17.9)	4 (18.2)	
Fathers' level of education				
Nil	2 (2.8)	3 (4.5)	1 (4.5)	0.008*
Primary	2 (2.8)	6 (9.0)	4 (8.2)	
Secondary	17 (23.9)	17 (25.4)	11 (50.0)	
Tertiary	50 (70.4)	41 (61.2)	6 (27.3)	
Fathers' occupation				
Business/Trading	23 (32.4)	26 (38.8)	10 (45.5)	0.008*
Civil/Public servant	17 (24.0)	14 (20.9)	2 (9.0)	
Professionals	20 (28.2)	10 (14.9)	0	
Artisans	9 (12.7)	13 (19.4)	10 (45.5)	
Unemployed	2 (2.8)	4 (6.0)	0	
Socioeconomic status				
Low	17 (23.9)	21 (31.3)	16 (72.7)	< 0.001*
Middle	18 (25.4)	24 (35.8)	4 (18.2)	
High	36 (50.7)	22 (32.8)	2 (9.1)	

DISCUSSION

Most of the participants in the present study were of age group 30-39 years (54.4%). This was at variance with other studies in Ethiopia [22-24] and other parts of Nigeria [25,26] where younger age groups constituted most of the study participants whereas In Osogbo, [27] Nigeria older age groups predominated. The reason for this difference could not be ascertained other than variation in the age groupings in the various studies.

Most participants (89.4%) defined blood transfusion correctly. This was not the case in a similar study carried out in Osogbo, [27] Nigeria over a decade ago. The improvement in the knowledge of the participants in the present study is not surprising as there is increased information now when compared to a decade earlier. It is pertinent to note that more than half (58.1%) of the participants in the present study had tertiary education and

above which possibly may have influenced their knowledge of blood transfusion.

Majority (92.5%) participants knew that blood transfusion saves lives. This corroborates findings carried out in other studies in Nigeria. [25-27] Lower percentages of 88.3% and 75.5% were however, reported in Ethiopia. [8,23] In addition, a qualitative study based on in depth interviews of caregivers of transfused children and focus group discussions with community members in Uganda [28] documented that care-givers of children and community members held blood transfusion in high regard and it was being valued as a life-saving procedure.

More than 2/3rd (70.6%) participants knew at least one indication of blood transfusion in the present study. This was at variance with a study in Osogbo, [27] Nigeria where less than half (40.8%) participants knew ≥ 4 indications of blood transfusion. Kabinda et

al^[15] in the Democratic Republic of Congo documented a low percentage of correct responses on the clinical indications of blood transfusion in children and adults. The latter finding was worrisome as the study participants comprised of health workers of which 87.4% were nurses and more than 50% had greater than 5 years working experience. This therefore calls for increased education of the populace including healthcare workers on blood transfusion.

Majority of the participants 88.1% knew the correct route of blood transfusion as also documented in Osogbo,^[27] Nigeria. It was worrisome that as much as 11.9% did not know the correct route of blood transfusion in the present study. Similarly, in the Osogbo study,^[27] 12.8% said transfusion was via the mouth, 6.4% via the anal canal and 2.1% via intramuscular route. Thus, the importance of health education on blood transfusion cannot be overemphasized.

Most participants in the present study knew that blood should be tested for compatibility (86.9%) and screened for infections (86.9%) before use. A higher percentage (94%) was reported in Osogbo,^[27] Nigeria.

Up to three quarters (75%) of the participants in the present study knew blood transfusion had complications although only about half (50.6%) of these participants knew at least 2 complications. Similarly, Kebede et al^[22] in Ethiopia documented that about 86.3% knew blood transfusion can transmit infection while Melku et al^[23] reported that 82% acknowledged that recipients of blood could be infected, however 75.7% knew disease(s) transmitted via blood transfusion. There was widespread perceived risk of blood transfusion including risk of HIV infection and blood incompatibilities among caregivers of children and community members in a qualitative study carried out in Uganda.^[28] Interestingly, a cross-sectional descriptive study of health workers in the University of Benin Teaching Hospital,^[29] Nigeria showed that almost all the participants (95.7%) were aware of the risk of infection through blood transfusion.

In the present study, majority (44.4%) had good knowledge. This is not surprising as more than half of both mothers and fathers had tertiary education. The level of good knowledge in the present study was similar to the 48.2% reported by Melku et al^[23] in Ethiopia but higher than the 37.2% documented by Salaudeen et al^[26] in north central Nigeria. A much higher percentage of 71.2% and 76% were documented in another study in north central Nigeria^[25] and Ethiopia^[24] respectively. A cross sectional study of nurses on blood transfusion in Malaysia^[30] showed that majority of the respondents had moderate level of knowledge. It is pertinent to note that although majority (92%) of the nurses in the latter study had diploma degree and up to 68.5% had more than 5 years working experience, majority (92.5%) of the participants had no training on blood transfusion. Thus, training and re-training of health personnel is important to increase the knowledge base of the populace including the hospital community. The varying level of education could also be attributable to the variation in the classification of knowledge as well as non-uniformity of the questions used in the assessment.

Almost two-third (65.6%) of the participants were willing to donate blood for transfusion in the present study, if their child(ren) was in need. This was surprisingly low as almost all the participants (92.5%) knew that blood transfusion was a life-saving procedure. Higher percentages of 73.9%, 78.1% and 85.5% were reported by Oluomachi et al,^[25] Kebede et al^[22] and Melku et al^[23] in Ebonyi state and Ethiopia respectively. In contrast, Melku et al^[8] in another study in Ethiopia reported that only 46.4% participants were willing to donate blood voluntarily within the coming 6 months. This low percentage could be because blood donation in the latter study was voluntary only and not replacement or with remuneration. In the present study, donation was majorly a replacement donation with 43.6% being donated by either father or mother, 25.5% by relatives/friends. Replacement and commercial donors thus

predominated in the present study which is against the World Health Organisation recommendation in favour of voluntary non-remunerated blood donors being the best and safest source of blood for transfusion.^[31] Sadly, blood donation has been low as seen in Benin^[29] Nigeria where only 22.1% participants had ever donated blood, Addis Ababa,^[24] Ethiopia 26.4% and 36.9% in Ebonyi State,^[25] Nigeria. It is worthy of note that Kebede et al^[22] in their institutional cross-sectional study documented that attending primary school and above, having favourable attitude towards blood donation, having adequate knowledge of blood donation and ever donated blood were factors significantly associated with the willingness to donate blood. Also, sex, age and level of education were found to be predictors of voluntary blood donations in other studies.^[32,33]

In the present study, the commonest reason for not donating blood was fear of not having sufficient blood followed by no reason given, fear of donating ones' blood and not fit to donate blood. Participants not approached to donate blood or no one asked for blood donation was the commonest reason given in other parts of Nigeria^[25,29] and Ethiopia^[24] whereas fear of pain was the commonest reason given in another study in Ethiopia^[23] while feeling of being unfit was the commonest in another Ethiopian^[8] study. These varying reasons could be attributable to differences in geographic regions, cultural differences, levels of education and variations in their level of knowledge concerning blood donation/transfusion.

Majority of the study participants (80.9%) would give consent for blood transfusion of their children if the need arose. A hospital based cross-sectional study carried out in south western^[27] Nigeria on patients in a teaching hospital showed that slightly less than 2/3rd will accept blood transfusion while majority (86%) will encourage their family members to be transfused. In the present study, less than 1/4th participants will not give consent to transfuse their children and the commonest reason given was their religious

belief. This was at variance with the study in south western^[27] Nigeria where fear of infection was the commonest reason for not consenting to blood transfusion. In the latter study, religious belief was the 3rd commonest reason given. Education of the public including religious organizations will thus go a long way in increasing the awareness of blood transfusion thereby improving its' acceptability as an important aspect of treatment in children. It was also worrisome that most participants did not consent to transfuse their children for no obvious reasons. Immediate and aggressive health education of the masses is thus advocated to create awareness of this very important life safer and indispensable medical management in children.

In the present study, mothers' level of education, fathers' level of education, fathers' occupation and socio-economic status were significantly associated with the level of knowledge of the study participants. This was not consistent with the findings by Melku et al^[23] in which no socio-demographic factor was significantly associated with the knowledge of blood donation. Salaudeen et al^[26] in a similar study documented that age group, tertiary level of education, religion and professionals/civil servants were significantly associated with the knowledge of blood transfusion.

The commonest source of information was from health workers/hospital which accounted for more than ½ (57%) as similarly reported by Salaudeen et al^[26] and Oriyomi et al^[27] in north central and south west Nigeria respectively. Social media which is presently one of the major forms of passing information to people was one of the least (11%) source of information concerning blood transfusion in the present study. Efforts should therefore be intensified to increase educational programs on blood transfusions via various social media platforms such as Facebook, Twitter, WhatsApp, Tik Tok etc. Religious and civic organisations should also be encouraged to educate the masses about blood transfusion in order to increase its' awareness, safety and acceptance as an

important modality of treatment in children.

CONCLUSION

Most caregivers attending the Paediatric Outpatient Clinic of the Rivers State University Teaching Hospital had good knowledge on blood transfusion in children with majority consenting to blood transfusion and almost 2/3rd willing to donate blood for their children. Although majority of information on blood transfusion was obtained from health workers/hospital, effort must be intensified to further increase these percentages by increasing educational programs on blood transfusion via other sources such as social media platforms, worship centres, radio and televisions as well as in the communities so as to increase knowledge as well as attitude and practices of caregivers towards blood transfusions of their child(ren). This will thus reduce childhood morbidity and mortality.

Acknowledgement: We acknowledge the research assistant (house officer), nurses and other support staff in the Paediatric outpatient clinic of the RSUTH.

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- How to cite this article: Boma Awoala West, Jennifer Chimenka Nwosu. Knowledge level, attitude and practice of blood transfusion among caregivers attending the paediatric outpatient clinic in the rivers state university teaching Hospital, Nigeria. *Int J Health Sci Res.* 2024; 14(6):156-168. DOI: [10.52403/ijhsr.20240624](https://doi.org/10.52403/ijhsr.20240624)
