BLOOD TRANSFUSION IN OBSTETRICS: ATTITUDE AND PERCEPTIONS OF PREGNANT WOMEN.

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ABSTRACT

Background: Obstetrics haemorrhage is the leading cause of preventable maternal deaths worldwide. Blood transfusion is pivotal to death reduction, but are the women aware of its importance?

Objectives: The study investigated the view of a population of pregnant women on obstetrics related blood transfusion.

Methods: Structured questionnaires with sections on bio-social variables, obstetrics and surgical history, history of index pregnancy and blood transfusion related questions were administered to 500, randomly selected women who consented to the study. The findings were statistically analyzed.

Results: The major predictors of acceptability of blood transfusion were previous delivery of still born baby (p=0.046), ante- partum haemorrhage (p= 0.004) and the threat of death (p= 0.016)

Conclusion: Fifty four percent of the participants would not accept blood transfusion in pregnancy, however, if it were a lifesaving option the percentage was reduced to 31%.

INTRODUCTION

Maternal haemorrhage is the leading cause of preventable maternal deaths worldwide; it encompasses ante partum, intra partum and postpartum bleeding.[1] Obstetric haemorrhage is the single most significant cause of maternal mortality worldwide, accounting for 25–30% of all maternal deaths.[2, 3] From 1991 to 1999, 17% of pregnancy-related deaths in the USA were due to haemorrhage.[4] Although, in developed countries ante partum haemorrhage is no longer a major cause of maternal mortality, it is still an important cause of maternal and perinatal morbidity in developing countries.[5] By contrast, postpartum haemorrhage continues to be a major cause of maternal deaths both in the developing and in the developed worlds.[5]

The causes of obstetric hemorrhage differ, depending on whether the hemorrhage occurs ante-partum, intra-or postpartum. Ante-partum haemorrhage is caused in approximately half of the cases by placenta praevia or placental abruption. In the rest of the cases no precise cause has been identified (haemorrhage of uncertain origin) [5]. The most frequent causes of postpartum haemorrhage are retained placenta and uterine atony[5]. A Nigerian study posted: "Uterine atony, retained placenta and coagulation defect in that order as the main causes ofmaternal death from primary post-partum

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haemorrhage"[6]. In rare cases, inherited bleeding disorders like haemophilia, Von Willebrand disease, or factor IX deficiency may cause severe postpartum haemorrhage, with an increased risk of death[7]. The consequences of bleeding depend on the amount of blood lost, the previous health status of the mother, and availability of treatment. With uterotonics and or blood transfusions, there may be an increased risk of death and cardiovascular arrest in women who are anaemic prior to the bleeding episode.

Agreement on the criteria for classifying an individual as a case of maternal haemorrhage has not been easily achieved. There are problems in actually measuring the blood loss during delivery and in the postpartum period; physicians tend to underestimate the quantity of blood lost[8]. In a study of 228 pregnant women who had vaginal delivery at Syrinagarind hospital, Thailand, The reported incidence of 3.51% was in respect of primary postpartum haemorrhage (defined as 1000ml or more) by direct measurement, compared to only 0.44% by visual estimation[8], although the formal definition of postpartum haemorrhage is blood loss of 500ml or more within 24 hours after delivery, and or within 6weeks following delivery.

Global Burden of Disease **2000** considered only blood loss of 1000ml or more, because it has greater clinical significance on the patient. It should be noted that pregnant women who refuse blood transfusion when the need arises are prone to die as a result.

The confidential enquiry into maternal death report[8] highlighted the very high risk of mortality in women who refuse blood transfusion; the death rate in this group of women was 1 per 1,000 mortalities compared with an expected incidence of less than 1 per 100,000 mortalities[9].

Blood transfusion service is not expected to be alien to the group of patients studied at the University College Hospital, Ibadan, however, occasionally, some of the pregnant women refused blood transfusion due to religious beliefs and or ignorance. The main group of women who may refuse for religious reasons are the Jehovah's Witnesses, who interpret a Biblical injunction[10] to mean that the transfusion of whole blood or its primary components is prohibited, even when considered to be life-saving. It would not be out of place to find out the proportion of pregnant women who are likely to refuse blood transfusion, for the cohort will impact negatively on the already high mortality figure if not identified and properly counselled ahead of need.

This study was aimed at determining the view of a population of pregnant women on obstetrics-related blood transfusion.

METHODS

This was a cross sectional study of pregnant women who received ante natal care at the University College Hospital (UCH), Ibadan. Five hundred pregnant women who consented to participate in the study were randomly selected at each booking clinic day; ethical approval was granted by the hospital's ethical committee.

A structured questionnaire was the tool used for the study. The sections included bio-social variables, obstetrics and surgical history, history of index pregnancy as well as blood transfusion related questions.

Data collected was coded and primarily entered into the computer on Microsoft Excel sheet and was thereafter exported to the Statistical Package for the Social Sciences (SPSS version 15, Inc. Chicago, IL, USA) for exploratory and statistical analysis. Frequency tables and graphs were generated for relevant variables. Descriptive statistics such as means and standard deviations were used to summarize quantitative variables, while categorical variables were summarized with proportions and confidence intervals. The chi square test was used to

investigate associations between any two categorical variables. Moreover, a binary logistic regression was used to model statistically significant variables that are likely to predict acceptance of blood transfusion. All tests were declared significant at the 5% level of significance.

RESULTS

Four hundred and forty nine participants were fit for evaluation, the mean age was 28.7±5.3years, and 54.1% were between 27 and 36 years, while 9.4% were 37 years and above. The respondents were either unemployed or self-employed (26.7% or 52.6% respectively). Secondary school education was the highest level of education (42.8%) attained, 42.3% had tertiary education, while 1.8% had no formal education; 93.5% were married and 71.8% had monthly incomes of ? 20, 000(US$134.00) and below. Fifty five percent were Muslims, while 44.2% were Christians; thirteen percent were polygamous and the modal family size was 2-3 (69.3%) Table1.

Among those who would accept blood transfusion, 65% were professionals, 20% were unskilled, and 45% had secondary education, while 20% had no formal education. Fifty percent of the married women and 13% of the single ladies would accept blood transfusion; 70% of those whose monthly income surpassed US$300.00 and 30% of those whose monthly income was US$67.00 would accept blood transfusion. Fifty percent of those who had delivered a stillborn baby and 50% of those who lost an infant at less than four weeks would agree to blood transfusion. Table 2

More than 50% of those who had myomectomy, caesarean delivery and Manchester's repair would accept blood transfusion.

Eighty four percent of those who had had blood transfusion before, 65% of hypertensives, 60% of rhesus negative women and 85% of pre eclamptics / eclamptics would accept blood transfusion.

Seventy four percent of the participants believed that anaemia was a reason for transfusion, 89% agreed that ante partum haemorrhage was a reason for transfusion and 88% agreed that post-partum haemorrhage was a reason for transfusion; 40% were aware of the risk of HIV transmission; 45% were mindful of the likelihood of blood transfusion in pregnancy; and 45% percent were agreeable to blood donation. Table 3

The statistically significant predictors of blood transfusion were previous delivery of still born babies (p=0.046), ante- partum haemorrhage (p= 0.004) and threat to life, (p= 0.016) Table 4

Fifty four percent of the participants said they would not accept blood transfusion, however, if it were a lifesaving option the percentage came to 31. Table 5

DISCUSSION

Majority of the participants were multiparous, hence, they were expected to have had ante natal counselling session(s) and be knowledgeable about blood transfusion, however, one third would accept transfusion, two thirds believed transfusion was risk free, that pregnancy would increase the need for more transfusions; it's either they had never had a counselling session in the ante natal clinics (ANC) or the sessions were not effective, after all, it is on record that across sub-Saharan Africa, there is a wide variation in ANC attendance—although 71% of pregnant women attended formal ANC at least once, 44% attended ANC four or more times[11], therefore, a better acceptance figure is expected.

Educational status, high income and by implication, higher social rating have a positive influence on acceptance of blood transfusion among the participants in this study. Conversely, only 20% of those who had no formal education were willing to accept blood transfusion; therefore, educational achievement is associated with an increased

awareness of illness, symptoms, and availability of services. This observation is similar to an earlier finding that large differences exist in relation to socio-economic status; a favourable socio-economic status is associated with higher usage of health care services[12]. A study in Tanzania also revealed that educational attainment influenced utilization of health care services[13].

History of bad obstetrics outcome as typified by early neonatal death and stillbirth, history of previous caesarean delivery, blood transfusion, ante and post-partum haemorrhage are variables which positively affect the decision to accept blood transfusion. These observations could be attributed to the women's experiences on their previous visits to the health facilities on one hand, and the willingness to have good obstetrics outcome on the other hand. This is corroborated by findings in a Nicaraguan study which stated: "Women's past experiences with poor-quality care or unclear information in health facilities influenced future behavior"[14].We might safely assume that those who had blood transfusion in the past and are favourably disposed to transfusion now must have had uneventful transfusions, ditto the participants who had previous caesarean delivery, ante- partum and post – partum hemorrhage.

Awareness of risks associated with blood transfusion is high among the participants; 40% were aware of the risk of HIV transmission, blood transfusion reaction, and death from mismatched blood, while an equal percentage favoured blood availability in the blood blank for pregnant women, and are in support of donation because pregnancy increases the need for blood.

A similar study carried out in Jordan reported that 88% of the women were aware of and would accept blood transfusion [15]; a UK study reported 43% acceptance[16], the rate in this study is the lowest.

The observed low awareness and acceptance rate would impact negatively on the maternal mortality rate, which is relatively high in this environment. Obstetric haemorrhage is the most common cause of maternal death, causing 24% of, or an estimated 127,000 maternal deaths annually [17], hence, counselling sessions with emphasis on blood transfusion is desirable.

Thirty one percent of the pregnant women in this study will not accept blood transfusion even if it is the only available means of keeping them alive, 12% of the participants in the Abu-Salem et al[15] study rejected blood transfusion, while 8% was reported by Khadra et al[16]. This group of women requires intensive counselling.

CONCLUSION

The percentage of patients who declined blood transfusion even at the risk of death in this study is high.

A criterion audit of women's awareness of blood transfusion in pregnancy
BMC Pregnancy and Childbirth 2002; 2:7

Table 1: Background Characteristics of the Respondents

Variable	No of respondents	% (95% C.I)
Age group		
<20 years	13	2.9 (0.7 - 13.3)
20-34 years	367	81.7 (1.8 - 78.1)
35 years and above	69	15.4 (1.7 – 12.0)
Occupation		
Student	62	13.8 (10.6-17.0)
Unemployed	61	13.6 (10.4-16.8)
Unskilled	31	6.9 (4.6 -9.3)
Civil Servant	69	15.4 (12.0 – 18.7)
Self-employed	204	45.4 (40.8-50.1)
Professional	22	4.9 (2.9-6.9)
Educational Status		
None	8	1.8 (0.6 - 3.0)
Primary School	59	13.1 (10.0 -16.3)
Secondary School	192	42.8 (8.2 - 47.4)
Tertiary Institution	190	42.3 (37.7 - 46.9)
Marital Status		
Single	26	5.8(3.6-7.9)
Married	416	92.7(90.2-95.1)
Separated/Divorced	7	1.6(0.4-2.7)
Monthly income		
Less than #10,000	131	29.2(25.0-33.4)
10,000-20,000	94	20.9(17.3-24.7)
21,000-30,000	31	6.9(4.6-9.3)
30,000-50,0000	17	3.8(2.0-5.6)
Greater than 50,000	33	7.3(4.9-9.8)
Others	143	31.8(27.5-36.2)
Religion		
Christianity	403	89.6(86.9-92.6)
Islam	46	10.2(7.4-13.1)

Mean age of 28.7 and standard deviation of 5.3
Mean past pregnancy with a mean of 3
Past deliveries with a mean of 2.0

Table 2: Association between Demographic Characteristics And Acceptance Of Blood Transfusion

Variable	Percentages	Total	P-value
Age group			
<20 years	25.0	12	
20-34 years	36.1	310	0.725
35 years and above	36.7	60	
Occupation			
Student	40.0	50	
Unemployed	34.6	52	
Unskilled	17.9	28	0.004*
Civil Servant	47.5	61	
Self-employed	30.4	171	
Professional	65.0	20	
Educational Status			
None	20.8	48	
Primary School	31.4	169	0.003*
Secondary School	44.7	159	
Tertiary Institution	35.6	376	
Marital Status			
Single	12.5	24	
Married	37.2	352	0.039*
Separated	50.0	100	
Monthly income			
Less than #10,000	30.6	121	
10,000-20,000	26.5	83	
21,000-30,000	43.3	30	0.000*
30,000-50,0000	40.0	15	
Greater than 50,000	70.0	30	
Religion			
Christianity	36.1	346	0.739
Islam	33.3	36	

*significant @ 5%

Table 3: Association Between Awareness/Risk Of Transfusion In Pregnancy And Acceptance Of Blood Transfusion

Variable	Percentages	Total	P-value
Anaemia in pregnancy			
True	73.5	68	0.000*
False	26.1	245	
Ante-partum haemorrhage			
Yes	89.4	47	0.000*
No	24.5	286	
Post-partum haemorrhage			
Yes	88.2	51	0.000*
No	22.6	274	
Is blood transfusion risk free?			
True	36.8	209	0.319
False	31.6	136	
It can transmit infection like HIV			
True	40.5	264	0.005*
False	23.1	78	
There could be transfusion reaction			
True	40.1	257	0.127
False	29.3	58	
It could lead to loss of life			
Yes	40.0	225	0.177
No	31.9	91	
Pregnancy increases the need for blood transfusion			
True	45.3	232	0.000*
False	22.4	116	

Variable	Percentages	Total	P-value
Blood must always be available in the blood bank for pregnant women			
True	43.7	261	0.000*
False	20.4	93	
Pregnant women's relations must be made to donate for them			
True	45.5	231	0.000*
False	21.4	117	
If pregnant, would like to donate blood for a relation			
True	43.3	270	0.000*
False	19.3	88	

Table 4: Predictors of Blood Transfusion Acceptance

Variables	Odds ratio	95 % Confidence Interval	P-value
Marital Status(ref=Separated)			
Single	0.177	0.012 - 2.671	0.211
Married	0.992	0.122 - 8.065	0.994
Previous still birth (ref=No)	2.703	1.020 - 7.163	0.046*
Death of baby before 28 days (ref=No)	0.583	0.172 - 1.980	0.387
Hypertension in pregnancy (ref=No)	3.319	0.535 - 20.586	0.198
Removal of fibroid(myomectomy) (ref=No)	1.704	0.373 - 7.785	0.492
Caesarean section(ref=No)	1.118	0.327 - 3.821	0.859
Anaemia in pregnancy(ref=No)	2.204	0.686 - 7.084	0.185
Ante-partum haemorrhage(ref=No)	15.815	2.478 - 100.924	0.004*
Pregnancy increases the need for blood bank (ref=false)	2.146	0.847 - 5.439	0.107
Availability of blood in blood bank (ref=false)	1.305	0.408 - 4.172	0.654
Pregnant women's relations must be made to donate(ref=false)	0.819	0.294 - 2.281	0.703
Pregnant woman will like to donate blood (ref=false)	1.745	0.559 - 5.448	0.337
Acceptance of transfusion if it is the only available lifesaving option (ref=false)	6.607	1.426 - 30.615	0.016*

Table 5: Respondent Opinion on Acceptance of Blood Transfusion

Variable	Acceptance of blood transfusion if it is the only available saving option			
	True	False	Total	P-value
Will accept blood transfusion				
Yes	119(96.0)	5(4.0)	124	0.000*
No	142(68.6)	65(31.4)	207	
Total	261(78.9)	70(21.2)	331	

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