

# Sociocultural Impediments To The Use Of Amniotic Membranes In South Western Nigeria

P Olaitan, J Ubah, D Adekanle

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## Abstract

**Background:** Various surgical specialties have made use of the amniotic membranes in wound care with good success. In Yoruba land, south western Nigeria, the placenta is taken as a very important tissue that had to be taken home by the father after the child is born.

**Objectives:** The present study was designed to assess the willingness or otherwise of pregnant women in Osogbo, South Western Nigeria to allow amniotic membranes to be harvested from the placenta after they deliver their babies. It was also to find out what the community does with the placenta.

**Materials And Methods:** Structured questionnaires were distributed to consented pregnant women attending antenatal clinics at the Lautech Teaching Hospital, Asubiaro State Hospital and Our Lady of Fatima Catholic Hospital, all in Osogbo, Nigeria. Biodata, methods of discarding the placenta, willingness to donate etc. were some of the information on the questionnaires.

**Results:** A total of 279 women were interviewed. Only 26(9.3%) were willing to donate placenta for medical use of the amniotic membranes. Placentas are taken as an important part of the baby both in utero and after birth and they are usually "carefully" discarded. The beliefs as well as the culture on placenta use, appear to be the important factors in knowing who may consent to harvesting of amniotic membranes for medical use.

**Conclusion:** There are sociocultural impediments in this part of the world to the use of amniotic membranes. Education of the women as well as their husbands (who have great influence on them) on the uses to which placenta may be made, is likely to make more women consent to harvest of amniotic membranes from the placenta for therapeutic uses.

## INTRODUCTION

The first reported use of fetal membranes in skin transplantation was by Davis in 1910<sub>1</sub>. In 1913, Sabella used amniotic membrane on burned and ulcerated skin surfaces and observed lack of infection, marked decrease in pain, and increased rate of re-epithelialization of traumatized skin surface. Others have demonstrated the use of amniotic membranes as a biological dressing for open wounds including burns and chronic ulceration of the legs. Amniotic membranes have been successfully used in cases of eye surgery to prevent adhesion and in reconstruction in gynaecological, neurological, urological and vascular diseases.

Our centre is a young teaching hospital in the South Western Nigeria. In this part of the world, the placenta is usually held dear and is commonly asked after by the father shortly after

the birth of a child.

We decided to commence processing of amniotic membranes for surgical use in our centre. We however wanted to find out whether the pregnant women who are the potential donors of the placenta would be willing to consent to harvesting amniotic membranes from the placenta after they deliver. We also wanted to know the sociocultural beliefs of the people on the use of placenta and possible implications.

## PATIENTS AND METHODS

This study was conducted at the Antenatal Clinics of three main hospitals in Osogbo, Ladoke Akintola University of Technology (LAUTECH) Teaching Hospital, Asubiaro State Hospital and Our Lady of Fatima Catholic Hospital.

Ethical approval was obtained from the College of Health

Sciences and the Teaching Hospital of Ladoke Akintola University of Technology's ethical committee and consent of the pregnant women was taken before proceeding with administration of the questionnaires. All consented pregnant women who presented within the two months period (March 1<sup>st</sup> to April 30<sup>th</sup> 2005) of the study in the 3 hospitals were interviewed.

Semi-structured questionnaires were administered to the women. The questions were to assess their willingness to allow amniotic membranes to be harvested from the placenta after delivery. Their knowledge about the usefulness of these tissues to patients with burn wounds, ophthalmic and gynaecological problems was also assessed. The women were also asked whether the knowledge of the usefulness of placenta could make them to donate it for amniotic membrane or not. The uses to which the placenta are put were also asked. The information obtained was then collated and analyzed using descriptive analysis and Chi<sub>2</sub> tests where appropriate from SPSS version 11.

## RESULTS

### SOCIODERMOGRAPHIC CHARACTERISTICS

A total of 279 pregnant women attending antenatal clinics at the three Hospitals were interviewed.

The women were from varying social strata and educational backgrounds. Their ages ranged from 17 to 46 years with a mean age of 28.8 years (SD±4.84). Ninety three (33.3%) were nulliparae while 196(66.7%) were multiparae. One hundred and fifty two (54.3%) of the respondents were Christians, 122(43.7%) were Muslims while 1(0.4%) was a traditional religionist and 4(1.4%) did not indicate their religion. Ninety three (35.3%) of the women were government employees, 140(50.2%) were self employed, 7(2.5%) were employed by private individuals, 18(6.5%) were unemployed, while 21(7.5%) were students.

Seventeen (6.1%) of the women had no formal education, 28(10.0%) had only primary/elementary education, 112(40.1%) had secondary education while 122(43.7%) had tertiary education (Table 1).

**Figure 1**

Table 1: Sociodermographic Characteristics of the Respondents

	Number	Percentage
<b>Age group (years) :</b>		
< 20	1	0.4
20 - 24	43	15.4
25 - 29	121	43.4
30 - 34	79	28.3
35 - 39	29	10.4
≥ 40	6	2.2
<b>Religion :</b>		
Christianity	152	54.5
Islam	122	43.7
Traditional	1	0.4
None	4	1.4
<b>Occupation:</b>		
Government employed		
Private employed	93	33.3
Self-employed	7	2.5
Unemployed	140	50.2
Students	18	6.5
	21	7.5
<b>Education :</b>		
None	17	6.1
Primary	28	10.0
Secondary	112	40.1
Tertiary	122	43.7
<b>Gravidity</b>		
Primigravida	93	33.3
Multigravida	196	66.7

### KNOWLEDGE AND WILLINGNESS TO DONATE PLACENTA

Two hundred and fifty four (91.0%) of the women had a prior knowledge of blood donation in the hospital, 19(6.8%) had never heard and 5(2.2%) were not sure they had heard blood donation. Compared to blood donation, twenty five (9.1%) of the respondents had some knowledge about the medical use of placenta, 230(78.5%) did not, while 34(12.2%) were not sure they knew that placenta could be used for medical reasons. Only 23(8.2%) of the women had prior knowledge that placenta too could be donated for harvestation of the amniotic membranes while 231(82.8%) were not aware and 25(9.0%) were not sure of ever hearing of this. Twenty six (9.3%) of the respondents were willing to donate their placenta for amniotic membranes use, 218(78.1%) were not willing while 35(12.6%) were not sure they would readily donate the placenta.

### CULTURAL FACTORS AND BELIEFS

One hundred and fifty seven (56.3%) of the women felt their culture forbade placental donation, 52(18.6%) did not think so, while 70(24.6%) were not sure. Twenty (7.2%) women felt their husbands would give necessary support to placental

donation while 214(76.7%) thought their husbands would not and 45(16.1%) were not sure. One hundred and thirty women (46.6%) felt placental donation could cause harm to their babies, 66(23.7%) felt it would not while 83(29.8%) were not sure. Seventy six (27.2%) of the respondents felt the placenta was useful to the baby after delivery, 148(55.0%) felt it was not while 55(19.7%) were not sure. Reasons for not willing to donate the placenta were as shown in table 4 and included: fear of using the placenta for money rituals in 40(14.3%) women, fear of endangering baby's life in 24(8.6%) women, 47(16.8%) women never heard of such and would not want to be involved e.t.c.

**Figure 2**

Table 4: Reasons for rejecting placental donation

Reasons for rejection	Frequency	Percent
Fear of rituals for money making	40	24.0
Fear of endangering baby's life	24	14.4
Never heard of placenta donation and therefore can't donate	47	28.1
Fear of using the placenta to change the child's destiny	3	1.8
It is a part of the baby	2	1.2
No reason	1	0.6
Culture forbids it	6	3.6
Don't know placenta can be donated	5	3.0
I am from a royal family, we shouldn't do such a thing	1	0.6
Can't decide alone except with my husband's permission	34	20.4
My religion forbids it	3	1.8
Not acceptable to me	1	0.6
<b>Total</b>	<b>167</b>	<b>100.0</b>

## EFFECT OF POSSIBLE EDUCATION AND HUSBANDS' SUPPORT

The women were also asked whether the knowledge that placenta could be used medically on patients might help in changing their minds on placental donation. An increased number, 68(25.5%) would donate the placenta if it was truly useful medically while 150(56.2%) would not, and 49(18.4%) were not still sure. Majority, 214(76.7%) of the respondents believed their husbands would not support while 20(7.2%) believed and 45(16.1%) were not sure of their husbands' support for placental donation (Table 2).

**Figure 3**

Table 2: Willingness, and factors determining placental donation

	Number	Percentage
<b>Willingness to donate placenta:</b>		
Yes	26	9.3
No	218	78.1
Not sure	35	12.6
<b>Total</b>	<b>279</b>	<b>100</b>
<b>Husband would support placental donation :</b>		
Yes	20	7.2
No	214	76.7
Not sure	45	16.1
<b>Total</b>	<b>279</b>	<b>100</b>
<b>Effect of education on willingness:</b>		
Yes	68	25.5
No	150	56.2
Not sure	49	18.4
<b>Total</b>	<b>267</b>	<b>100</b>

Using Chi-squared to explore association between willingness to donate placenta; sociodemographic factors and various responses of the respondents (Table 3), it was observed that there was no significant association between the different age groups and willingness to donate placenta ( $P=0.209$ ). Respondents with tertiary education were least likely to donate placenta with only 7(5.8%) of them willing, while 6(22.2%) of those with only primary education are willing. There was however no significant difference in the willingness to donate among all the educational groups ( $P = 0.170$ ).

**Figure 4**

Table 3: Characteristics of the respondents and opinion about placental donation

	Total (%)	Yes (%)	No (%)	Not sure	$\chi^2 P$
<b>Age group (years):</b>					
< 20	1(4.1)	-----	-----	1(100)	$P = 0.209$
20 – 24	42(15.5)	5(11.9)	31(73.8)	6(14.3)	
25 – 29	116(42.8)	9(7.8)	96(82.8)	11(9.5)	
30 – 34	78(28.8)	7(9.0)	63(80.9)	8(10.3)	
35 – 39	29(10.7)	5(17.2)	21(72.4)	3(10.3)	
≥40	5(1.8)	-----	5(100)	-----	
<b>Total</b>	<b>271(100)</b>	<b>26(9.6)</b>	<b>216(79.7)</b>	<b>29(10.7)</b>	
<b>Occupation:</b>					
Government employed	92(33.7)	5(5.4)	79(85.9)	8(8.7)	$P = 0.242$
Self employed	139(50.9)	18(12.9)	107(77.0)	14(10.1)	
Private employed	7(2.6)	1(14.3)	4(57.1)	2(28.6)	
Unemployed	15(5.5)	-----	13(86.7)	2(13.3)	
Student	20(7.3)	2(10.0)	14(70.0)	4(20)	
<b>Total</b>	<b>273(100)</b>	<b>26(9.5)</b>	<b>217(79.5)</b>	<b>30(11.0)</b>	
<b>Education status:</b>					
None	11(4.1)	1(9.1)	8(72.7)	2(18.2)	$P = 0.170$
Primary	27(10.0)	6(22.2)	20(74.1)	1(3.7)	
Secondary	111(41.1)	12(10.8)	85(76.6)	14(12.6)	
Tertiary	121(44.8)	7(5.8)	101(83.5)	13(10.7)	
<b>Total</b>	<b>270(100)</b>	<b>26(9.6)</b>	<b>214(78.3)</b>	<b>30(11.1)</b>	
<b>Religion:</b>					
Christianity	149(52.2)	9(6.0)	119(79.9)	21(14.1)	$P = 0.004$
Islam	120(44.4)	16(13.3)	96(80.0)	8(6.7)	
Traditional	1(100)	-----	-----	1(100)	
<b>Total</b>	<b>270(100)</b>	<b>25(9.3)</b>	<b>215(79.6)</b>	<b>30(11.1)</b>	
<b>Gravidity:</b>					
Primigravida	89(32.7)	9(10.1)	67(75.3)	13(14.6)	$P = 0.394$
Multigravida	183(30.5)	17(9.3)	149(54.8)	17(9.3)	
<b>Total</b>	<b>272(100)</b>	<b>26(9.5)</b>	<b>216(79.4)</b>	<b>30(11.0)</b>	
<b>Husband support:</b>					
Yes	19(6.9)	8(47.4)	7(36.8)	3(15.8)	$P < 0.001$
No	212(77.4)	8(3.8)	194(91.5)	10(4.7)	
Not sure	43(15.7)	9(20.9)	17(39.5)	17(39.5)	
<b>Total</b>	<b>274(100)</b>	<b>26(9.5)</b>	<b>218(79.6)</b>	<b>30(10.9)</b>	
<b>Effect of Education:</b>					
Yes	68(25.5)	18(26.5)	35(51.5)	15(22.1)	$P < 0.001$
No	150(56.2)	4(2.7)	146(97.3)	-----	
Not sure	49(18.4)	3(6.1)	33(67.3)	13(26.5)	
<b>Total</b>	<b>267(100)</b>	<b>25(9.4)</b>	<b>214(80.1)</b>	<b>28(10.5)</b>	

Most of the respondents from both Christian and Islamic

faiths were unwilling to permit their placenta to be used for harvesting amniotic membranes with 119(79.9%) and 96(80.0%) of Christian and Muslim respondents respectively. However respondents of Christian faith were less likely to allow the harvesting of amniotic membranes from their placenta than their Muslim counterparts with 9(6.0%) and 16(13.3%) women respectively willing to donate. This is statistically significant ( $P=0.004$ ).

More proportion of the nulliparae, 9(10.1%) were more likely to donate their placenta than the multiparae respondents with only 17(9.3%) willing, though this was not statistically significant ( $P=0.394$ ).

Nine (47.4%) of the respondents who felt their husbands would support placental donation were willing to donate placenta compared to only 8(3.8%) of the respondents who did not feel their husbands would support donation of placenta. Thus, the women whose husbands are likely to support the program are more likely to donate ( $P=0.001$ ).

Educating the women by informing them about the fact that the placenta could be used for medical purposes and then asking if this would make them change their minds on placental donation also produced an interesting response. More respondents 68(25.5%) were then willing to donate compared to 26(9.3%) who were initially willing, ( $P<0.001$ ).

It was also observed that of the 19 women who believed their husbands would consent to the use of amniotic membranes of their babies' placenta, 9(47.4%) would consent, 7(36.8%) would not, while 3 (15.8%) were not sure they would. Of the 212 women who thought their husbands would not consent, 8(3.8%) would consent, 194(91.5%) would not while 10(4.7%) were not sure they would. Among the 43 women who were not sure their husbands would consent, 9(20.9%) would still consent, 17(39.5%) would not and 12(39.5%) were not sure they would. This is statistically significant ( $P<0.05$ ).

## **DISCUSSION**

Following the reported use of fetal membranes in skin transplantation by Davis in 1910<sup>1</sup> and Sabella,<sup>2</sup> successful use of amniotic membranes on burned and ulcerated skin surfaces with no infection,<sup>3</sup> amniotic membranes have been successfully used in cases of eye surgery to prevent adhesion and in reconstruction in gynaecological, neurological, urological and vascular diseases.<sup>3</sup>

Sorsby and Symons<sup>4</sup> found that patients with caustic burns

of the conjunctiva with corneal involvement could be treated successfully using amniotic membranes. Amniotic membranes have been used for chemical or thermal burns, ocular surface reconstruction with or without limbal stem cell grafting, and in patients with ocular cicatricial pemphigoid or Stevens-Johnson syndrome. Amniotic membranes has also found use in persistent corneal epithelial defects,<sup>7</sup> neurotrophic corneal ulcers,<sup>8,9</sup> leaking filtering blebs after glaucoma surgery,<sup>10</sup> pterygium surgery<sup>11,12</sup> conjunctival surface reconstruction, bullous keratopathy, chemical or thermal burns, ocular surface reconstruction with or without limbal stem cell grafting.

Gynaecological uses of amniotic membrane include reconstruction following vaginectomy,<sup>5</sup> for diffuse carcinoma in situ, vaginoplasty in cases of vaginal agenesis<sup>6</sup> and congenital absence of vagina.<sup>13</sup> Human amniotic membrane is believed to be nonimmunogenic.

The current consensus is that the intimate adherent property of the biological dressing to an open wound in some way suppresses bacterial proliferation and helps to eliminate existing bacteria.<sup>14</sup> Human amniotic membrane is believed to be nonimmunogenic. Antibodies or cell-mediated immune response to amniotic membrane have not been demonstrated, suggesting low antigenicity. Therefore, the use of systemic immunosuppressives in AMT is not required. In contrast, chorion provokes neovascularization and typical rejection phenomenon.<sup>5</sup> The amnion surface epithelial cells do not express HLA A, B, C, or DR or beta2-microglobulin.<sup>6</sup>

The various surgical significance of the amniotic membranes led to our centre's desire in processing this tissue for use in our practice. However we observed the importance placed on the placenta in our environment and therefore decided to objectively document the response of our pregnant women to a possible request for their consent in using amniotic membranes from their babies' placenta.

Majority, 218(78.1%) of the women would not want to consent to the use of their babies' placenta for amniotic membranes, while only 26(9.3%) would consent. When informed that the placenta membranes could be used to treat other patients, the number of those who would be willing to donate rose to 68(25.5%). This suggests that education of the women is likely to increase their awareness about amniotic membrane use and subsequent consent to harvest the membranes as majority 231(82.8%) of the women had never heard that amniotic membrane could be useful in treating patients

Many of these women, 157 (56.3%) felt their culture forbade placental donation. The influence of culture on consent is however not statistically significant ( $P = 0.290$ ). This means that there are other reasons for not consenting to amniotic membrane use apart from culture.

Husbands' influence is a strong factor. Of the 19 women who believed their husbands would give their consent to the use of amniotic membranes from their babies' placenta, 9(47.4%) would consent. Only 8(3.8%) of the 212 women who thought their husbands would not give their support would give their consent for the donation of placenta and this is statistically significant ( $P < 0.05$ ). The husband's support is therefore likely to improve consent to harvesting amniotic membranes from placenta in this environment.

Many 148(53.0%) believe the placenta were not useful to them and their babies after birth, while 76(27.2%) felt it was still useful and 55(15.7%) were not sure it was. There were varying negative beliefs as to what might happen if the amniotic membranes from the placenta were harvested and these may play a significant role on placental donation.

Our conclusion is that a lot of the women in our environment do not know that the placenta can be used to harvest amniotic membranes which can then be used in taking care of patients. They therefore have varying reasons for not wanting to donate the placenta. The reasons include fear of not knowing what the placenta would be used for; cultural and religious beliefs as well as the opinion of their husbands about it. It is remarkable to know that if the women were enlightened about the use to which the placenta could be made, more of them would be willing to let go of the placenta. There is therefore a need to educate all pregnant women and their husbands on the uses of amniotic membranes in our environment. People of the Christian faith may also need more education than those of Islamic faith as fewer Christians were willing to donate the placenta. We also believe that this will have a positive impact on the practice of amniotic membrane use and improve clinical care in our country.

## **CORRESPONDENCE TO**

Dr. P.B.Olaitan Burns and Plastic Surgery Unit, Department of Surgery Ladoke Akintola University of Technology Teaching Hospital, Osogbo, Osun state, Nigeria. E-mail : emiolaitan@yahoo.com

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**Author Information**

**P. B. Olaitan**

Burns and Plastic Surgery Unit, Department of Surgery, Ladoke Akintola University of Technology Teaching Hospital

**J. N. Ubah**

Department of Ophthalmology, Ladoke Akintola University of Technology Teaching Hospital

**D. A. Adekanle**

Department of Obstetrics and Gynaecology, Ladoke Akintola University of Technology Teaching Hospital