

Booking Status and Caesarean Section Outcome in LAUTECH Teaching Hospital, Osogbo

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ABSTRACT

Introduction: Antenatal care is concerned mainly with prevention, early diagnosis and treatment of general medical and pregnancy associated disorders. Quality of care varies across health facilities; the booking status of the women who deliver would have influence on the pregnancy outcome.

Method: A comparative study of caesarean section outcome among the booked and unbooked mothers delivered at Ladoke Akintola University Teaching Hospital, Osogbo.

Results: Mean age of the women was 29.7±5.9 years. The booked mothers were older than the unbooked mothers. All the maternal deaths were among the unbooked mothers. There were higher rates of preterm birth, neonatal asphyxia and neonatal admissions to intensive care units among the babies delivered by unbooked mothers compared to the booked mothers.

Conclusion: Unbooked women and their babies are at higher risks of caesarean section complications than the booked mothers.

Key Words: Booking status, Caesarean section, Maternal, Neonatal outcome

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INTRODUCTION

Most women in developing countries lack access to adequate care during pregnancy. Only 65% of women in developing countries receive antenatal care: 63% in Africa; 65% in Asia; and 73% in Latin America and the Caribbean. In developed countries, 97% of women receive antenatal care.¹ Such care can detect and manage existing diseases, recognise and treat complications early, provide information and counselling on signs and symptoms of problems, recommend where to seek treatment if complications arise, and help women and their families prepare for childbirth. Low utilisation rates for maternal health services are caused by a range of factors such as distance from health services; costs, including the direct fees as well as the cost of transportation, drugs and supplies; multiple demands on women's time; and women's lack of decision-making

power within the family. The poor quality of services, including poor treatment by health providers, also makes some women reluctant to use services.²

There were conflicting reports about maternal and perinatal outcome among the booked and unbooked women especially from developing countries which include higher incidence of poor perinatal and maternal outcome among the unbooked compared to booked women, while some reported no difference in maternal outcome among both groups.^{3,4,5}

Various studies had been carried out on delivery outcome and booking status, but the aim of this study is to focus on maternal and perinatal outcome of women that had caesarean section based on their booking status.

METHODOLOGY

The case notes of women who had caesarean section from June 1, 2004 May 30, 2005 were retrieved. The following informations such as socio-demographic factors, maternal and fetal complications were obtained. Data were entered into SPSS version 10 for analysis. Continuous variables were summarized using mean and standard deviation while percentages were used for categorical variables. Chi-square, Fisher's exact test and Student t-test were used to measure associations, all put at two sided significance level of less than 5%.

RESULTS

Total number of 286 case notes of women who had caesarean section during the study period were retrieved. One hundred and thirty-two (46.2%) were booked in our health facility while 154(53.8%) were unbooked. Mean age of the women was 29.7±5.9 years. The booked mothers were older, 31.3±4.9 years than the unbooked mothers, 28.4±6.3 years, (t = 4.3, p < 0.001). Mean birth weight for all the babies delivered was 3.1± 0.6 kg, for booked mothers it was 3.2kg and unbooked mothers was 3.1kg(t = 1.48, p = 0.139)

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Most of the women, 259(90.6%) were within the age group 20 – 34 years and were mainly Christians, 155(54.2%). The women were mainly Yoruba ethnic group, 276(96.5%), majority were para 1 – 5 and delivered term babies mostly,241(84.3%).

Two hundred and fifty seven(89.9%) had singleton gestation while 27(9.4%) had multiple gestation. Twenty five women (8.7%) had low birthweight babies, 204(71.4%) had normal weight babies, 23 (8.0%) delivered macrosomic babies while birth weight of the remaining 34(11.9%) were not recorded. Of the babies delivered, 185 (60.5%) were males while 121(39.5%) were females with sex ratio of 1.53:1.

Table 1 Socio-demographic Characteristics

Variables	Number	Percentages
Age(years)		
< 19	13	4.5
20 – 29	120	42.0
30 – 34	139	48.6
≥ 40	14	4.9
Religion		
Christianity	155	54.2
Islam	131	45.8
Tribe		
Yoruba	276	96.5
Ibo	2	0.7
Hausa	1	0.4
Others	7	2.4
Parity		
Para 0	104	36.4
Para 1 – 5	180	62.9
Para ≥ 6	2	0.7
Gestational Age at Birth(weeks)		
≥ 37	241	84.6
< 37	44	15.4
Number of fetuses		
Singleton	257	89.9
Multiple	27	9.4
Not indicated	2	0.7
Birthweight at Delivery(Kg)		
< 2.5	25	8.7
2.5 – 3.9	204	71.4
≥ 4.0	23	8.0
Not indicated	34	11.9
Sex at Birth		
Male	185	60.5
Female	121	39.5

Unbooked women, were at higher risk of giving birth to preterm babies 20.1% compared to booked women, 9.0% (OR = 2.29, 95% CI = 1.142 – 4.584, p < 0.02). All the unbooked women, (100%) had emergency caesarean section while 83.3% had emergency caesarean section among the booked women, the remaining booked mothers 16.7% had elective caesarean section. Seventy-five (48.7%) of the unbooked mothers had their children admitted to neonatal intensive care unit compared to 39 (29.5%) of the booked mothers (OR = 2.26, 95% CI = 1.388 – 3.894, p = 0.001). Unbooked, women had higher rates of neonatal death 9.1% than the booked mothers 3.8%(OR = 2.54, 95% CI = 0.890 – 7.251, p = 0.082).

Babies delivered by unbooked mothers, had poorer Apgar scores at 1 minute 81.7% compared to babies whose mothers were booked 60.5% (OR = 2.91, 95% CI = 1.646 – 5.183, p = 0.000). Babies whose mothers were unbooked, had poorer Apgar scores at 5 minutes 39.7% compared to babies of booked women, 12.9% (OR = 4.44, 95% CI = 2.364 – 8.351 p = 0.000).All the maternal deaths that occurred were among the unbooked women, 4(2.6%).There were no significant difference with regards to maternal post-operative morbidity and mean hospital stay between the two groups.(x² = 1.71,p=0.191 and t = 1.131, p = 0.261).

Table 2 Maternal and Perinatal Outcome

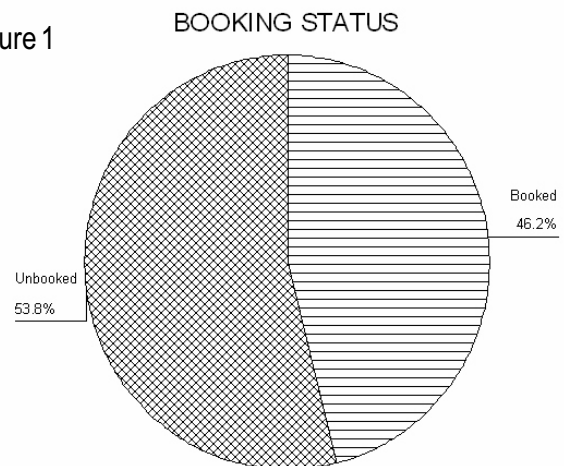
Variables	Booked Number(%)	Unbooked Number(%)	χ ²	df	P value
Gestational age at delivery(weeks)					
≥ 37	118(90.1)	123(79.9)			
< 37	13(9.9)	31(20.1)	5.65	1	0.017
Type of Caesarean section					
Emergency CS	110(83.3)	154(100.0)			
Elective CS	22(16.7)	-	27.80	1	0.000
Admission to NICU					
Yes	39(29.5)	75(48.7)			
No	93(70.5)	79(51.3)	10.88	1	0.001
Neonatal death					
Yes	5(3.8)	14(9.1)			
No	127(96.2)	140(90.9)	3.22	1	0.073
Apgar score at 1 minute					
≥ 6	75(60.5)	107(81.7)			
≥ 7	49(39.5)	24(18.3)	14.01	1	0.000
Apgar score at 5 minutes					
≥ 6	16(12.9)	52(39.7)			
≥ 7	108(87.1)	79(60.3)	23.38	1	0.000
Birth weight at delivery(kg)					
< 2.5	11(8.9)	17(13.0)			
≥ 2.5	113(91.1)	114(87.0)	1.10	1	0.295
Post caesarean section complications					
Yes	18(13.6)	34(22.1)			
No	114(86.4)	120(77.9)	3.40	1	0.065
Post caesarean section morbidity					
Yes	18(13.6)	29(19.5)			
No	114(86.4)	120(80.5)	1.71	1	0.191
Post caesarean section mortality					
Yes	-	4(2.6)			
No	132(100.0)	150(97.4)	Fisher		0.127
Mean Hospital Stay(days)	9.2	9.6	t = 1.13		0.261

x = chi-squared

df = degree of freedom

NICU = neonatal intensive care unit

Figure 1



DISCUSSION

Antenatal care is an essential part of safe motherhood; therefore its importance can not be overemphasized. The quality of care a woman receives in pregnancy would also determine the outcome both for the mother and the baby⁶. The quality of care differs from one health facility to the other based on human and infrastructural facilities available in each centre.. Our centre being a tertiary facility is expected to provide a better service than primary, secondary and private facilities. There were a total of 286 women who had caesarean section during the study period. One hundred and thirty-two (46.2%) were booked in our health facility while 154(53.8%) were unbooked. Mean age of the women was 29.7±5.9 years. The booked mothers were older, than the unbooked mothers. They were predominantly Yoruba ethnic group mostly para one to para four and majority had singleton pregnancy. Low birth rate was 8.7% and macrosomic babies constituted 8.0% among the babies delivered in the study period.

Caesarean section is accepted as a safe alternative mode of delivery in developed countries by both patients and caregivers⁷. Improvement in surgical and anaesthetic techniques as well as discovery of effective antibiotics has contributed greatly towards making this procedure safe. Today, it is one of the most commonly performed surgical procedures the world over⁸. However, It is not without important risks which include increased mean blood loss⁹, febrile illness, thromboembolic disease¹⁰, infection and a mortality risk of up to five times that of vaginal delivery.¹¹

The unbooked women were the ones who either did not receive any form of antenatal care in our health facility or were referred from other health facilities. All the maternal deaths due to complications of caesarean section were from the unbooked women which contributed significantly to high maternal mortality ratio experienced in this part of the world¹² and was in agreement with report from Zaria, Northern part of the country and Enugu in the Eastern part^{13,14}, though there was no significant difference in maternal post-operative morbidity which agreed with study in Saudi Arabia¹⁵ but at variance with report from Nigeria in the eighties^{13,14} this change might be due to improved care in the tertiary centres.

The expectation of any pregnant woman especially those undergoing operative deliveries is to go home not only with a live baby but also a baby that is healthy. However, there is strong correlation between booking status and perinatal outcome. Babies that were delivered by

unbooked mothers had higher rate of birth asphyxia at birth as evidenced by low apgar scores at 1 minute and responded poorly to neonatal resuscitation which was demonstrated by low apgar scores at 5 minutes, this is supported by other studies.^{16,17}

Considering the high cost of neonatal care even in the developed world, with deficient infrastructure in developing nations like ours, this study has demonstrated significant rate of neonatal admission to neonatal intensive care among the unbooked women compared to the booked mothers as reported in other studies¹⁸. All efforts must be geared towards reducing neonatal admission rate through improved neonatal resuscitation and care especially at every delivery.

Neonatal mortality accounts for a high proportion of deaths among children aged younger than 5 years²². High-income countries have reduced neonatal mortality rates (NMRs) to an average of four per 1000 livebirths. By contrast, the overall NMR in middle-income and low-income countries where 99% of neonatal deaths happen is 33 per 1000 livebirths²². Nigeria is among the nations that have very high perinatal mortality. Other factors such as preventable childhood diseases and poor health facilities also contribute to these deaths. This study has also shown that women that were not booked in our health facility would more likely experience higher rate of neonatal mortality compared to booked mothers, this corroborated other studies^{19,20,21}. To reduce neonatal mortality, interventions need to extend from pregnancy, through childbirth and the neonatal period, and beyond. Such interventions do not reach those most in need, especially the unbooked mothers.

Delays prior to presentation is commoner among the unbooked women which have been found to result in poor maternal and neonatal outcome this might also have contributed to unfavourable caesarean outcome among our study population.²³

Conclusion

Booking status contributed significantly to maternal and perinatal outcome among the women that had operative deliveries in our centre. This also reflected the quality of care received outside our health facility. Thus unbooked mothers still constitute high risk group with poorer maternal and neonatal outcome compared to the booked mothers. It is therefore imperative to manage these women with utmost care in order to reduce the unfavourable outcome.

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