

Pregnancy Outcome between Booked and Unbooked Cases in A Tertiary Level Hospital

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Abstract

To achieve the Sustainable Development Goals (SDG'2030) with regards to maternal health, there is need for research on the local causes and factors influencing adverse maternal & foetal outcomes in health institutions. Antenatal care throughout the pregnancy can ensure better fetomaternal outcome. It also contributed to reduction of maternal and infant mortality. This study was an attempt to enable health care providers to know where to focus to overcome adverse maternal outcome.

Objectives: To find out the difference in maternal and perinatal outcome and socio-demographic characteristics in booked and unbooked cases. Design: A Cross-sectional observational study.

Place of study: Department of Obstetrics and Gynaecology, Shaheed Suhrawardy Medical College Hospital.

Study period: April'2015 to July'2015. Study population- All patients admitted for delivery and puerperium during study period.

Results: Unbooked mothers constituted 39.1% of the 218 deliveries in the studied period. There was no mean age difference between booked mothers and unbooked mothers (26.05±5.5 and 25.44±5.4; P=0.667). But unbooked cases had a lower educational status (P<0.0036). Majority of the unbooked cases were from low family income group. Unbooked mothers were about less likely to deliver by spontaneous vaginal delivery compared to booked mothers (28% to 39%; P<0.339) and more likely to be delivered by emergency caesarean section than booked mothers. Unbooked mothers were having low birth weight babies than booked mother (2.65±0.595 and 3.02±0.477, p<0.010). Referral to neonatal unit more common in unbooked cases (69.6% to 25.6%). Post partum complications in unbooked and booked cases were (44% and 20.5%).

Key Words:

Booked case, Unbooked case, antenatal care, Fetomaternal out come

Conclusion: The study showed a positive correlation between socio-demographic factor and lack of proper antenatal care and adverse pregnancy outcome. Improving the availability and accessibility of quality antenatal and delivery care services in all our institutes will improve pregnancy outcome.

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Introduction:

Childbirth is a natural and physiological event. Though it acts as a rewarding event for majority of couples, yet it may turn out into a nightmare by an unforeseen complication.

Bangladesh is one of the developing countries with high maternal and neonatal mortality rates.

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Maternal mortality ratio in developing countries in 2015 is 239 per 100000 live births in developing countries versus 12 per 100000 live births in developed countries (WHO'2018)¹.

Though maternal mortality ratio in Bangladesh is 176 per 100000 live births which is still much higher than other countries². The health care system aiming to reduce morbidity and mortality related to pregnancy is focus on maternal and newborn health. The health care that a woman receives during pregnancy, at the time of delivery, and soon after delivery is important for the survival and well-being of both the mother and the child. The government of Bangladesh is committed to achieving Sustainable Development Goal (SDG) by 2030, to improve maternal health, by reducing the maternal mortality ratio from 176 to 70 deaths per 100.000 live births by 2030 (UNDP, 2015)¹. The SDG Goal 3 for Bangladesh has been set also to reduce

the under-5 mortality ratio from 30 to 12 per 1,000 live births in by 2030². Accordingly, the Ministry of Health and Family Welfare has developed various policies and strategies to improve maternal and newborn health. To achieve sustainable Development Goals (SDG) with regards to maternal health, there is need for research on the local causes and factors influencing adverse maternal outcomes in individual institutes.

Antenatal care is systemic supervision of pregnant women and aims to improve fetomaternal outcome. World Health Organization has specific guideline for a pregnant woman should have at least 4 antenatal visits during pregnancy period³. Maternal complications and poor perinatal outcome are highly associated with non-utilization of antenatal care and delivery care services provided by the health care centers. During 2010–2015, the ANC coverage, defined as the percentage of women aged 15–49 years who attended at least one ANC visit with a skilled provider, was around 85% globally and approximately 77% in the least developed countries^{4,5}.

But in Bangladesh the percentage of women who seek antenatal care at least once in their entire pregnancy period is 64% in whereas only 31% have more than four antenatal visits³.

The reason for poor utilization of health care facilities in Bangladesh is a matter of concern as many unbooked mothers are seen with dreaded maternal complications and adverse neonatal outcome. Though much stress has been put by our Government to reduce the complications of maternal and child health by proper utilization of antenatal care but the uptake of present services is far from universal even in settings where they are readily available.

With this impression, this study is planned to explore relationship between the socio-demographic characteristics of booked and unbooked cases with maternal and perinatal outcomes in a tertiary level hospital where antenatal, intranatal & postnatal care are well provided.

Methodology

This Cross-sectional observational study carried out among patients admitted for delivery and puerperium in labour ward in the Department of Obstetrics and Gynaecology, Shaheed Suhrawardy Medical College Hospital from April 2015 to July 2015. All women admitted

for delivery, irrespective of age, gestational age, parity, booking status and patients discharged and readmitted with any complication during puerperium were included in this study. Pregnant woman admitted for any complication and treated for without delivery of the foetus were excluded from the study.

Non-probability/Purposive sampling was done from the study population. Patients were selected through short interview applying inclusion and exclusion criteria. No more than 218 subjects were feasible to be included in the study during the study period. A structured questionnaire was designed including all the variables of interest

Data was collected through direct interview of the patients at the respective departments by the researcher and competent colleagues. Detailed history and Pregnancy outcome of patients were recorded on questionnaire. Antenatal booking record was reviewed. Patients were divided into 2 groups i.e., Booked and Unbooked.

Booked' patients were those who carried documented evidence of more than or equal to 4 antenatal visits. Those who did not fulfill these criteria were labeled as 'Unbooked' patients.

Collected data was checked and edited first. Then they were processed with the help of software SPSS (Statistical Package for Social Sciences) version 16 and analyzed. The test statistics used to analyze the data were descriptive statistics, Pearson Chi-Square test. For all analytical tests level of significance was set at 0.05 and $p < 0.05$ was considered significant.

Results:

A total of 218 patients who fulfilled the inclusion criteria were participated in the study.

Among 218 cases 60.9% were booked cases and 39.1% were unbooked cases.

Table 1

Distribution of patients according to having Antenatal care (n=218)

Having antenatal care	Frequency	Percent	Commulative Percentage
Booked cases	133	60.9	60.9
Unbooked cases	85	39.1	39.1
	218	100.0	

Table II

Comparison of Mean age (years) between booked and unbooked cases (n=218)

	No	Mean	Std. deviation	Std. Error	Mean	T test
Booked cases	133	26.05	5.591	.895		0.667
Unbooked cases	85	25.44	5.409	1.082		

Among 218 cases Mean ages of booked and unbooked cases were 26.05 ± 5.5 and 25.44 ± 5.4 . P value is more than 0.05 which is not significant.

Table III shows the comparison of educational status between booked and unbooked cases. Regarding 218 of

booked and unbooked cases, primary education level are same between two group, Higher secondary 78.9% and graduation and above are 87.5% in booked cases. Pearson Chi-Square test was done. P value is <0.05 , which is significant.

Table-III

Comparison of educational status between booked and unbooked cases (n=218)

Educational Status	Booked cases		Unbooked cases		Total		P value
	No	%	No	%	No	%	
Primary	27	50.0	27	50.0	54	100.0	0.0036
Secondary	29	42.9	42	57.1	71	100.0	
HigherSecondary	53	78.9	12	21.1	65	100.0	
Graduation and higher	24	87.5	4	12.5	28	100.0	
Total	133	60.9	85	39.1	218	100.0	

Table-IV

Comparison of Family income between booked and unbooked cases (n=218)

Cases		Family income				Total	P value
		<8000tk	8100-12000tk	12100-15000tk	>15000tk		
Booked cases	no	7	48	41	37	133	0.053
	%	5.1%	36.04%	39.82%	27.8%	100%	
Unbooked cases	no	10	48	24	3	85	
	%	12%	56%	28%	4%	100%	
Total	no	17	96	65	40	218	
	%	7.8%	43.8%	29.7%	18.8%	100%	

Among booked cases 28.2% patient's family income more than 15000Tk but in unbooked cases only 4%. There is no difference in 8100-12000tk group. Pearson Chi-Square test was done.

P value is >0.05 .

Table 5 shows among 218 cases vaginal delivery 34.4% and caesarean section 65.6%. 72% caesarean section occurred in unbooked cases. P value is >0.05 , which was not significant.

Table-V

Mode of delivery between booked and unbooked cases (n=218)

		Vaginal Delivery	Caeserean section	Total	P value
		Booked cases	no	51	
	%	38.5%	61.5%	100%	
UnbookedCases	no	24	61	85	100%
	%	28.0%	72.0%	100%	
Total	no	75	143	218	100%
	%	34.4%	65.6%	100%	

Table-V

<i>Comparison of Mean(Kg) Birthweight between booked and unbooked cases(n=214)</i>						
	No	Mean	Std. deviation	Std. Error	Mean	T test
Booked cases	133	3.02	.477	.077		0.010
Unbooked cases	81	2.65	.595	0.121		

Among 218 cases (4 cases are Intra uterine death) Mean birthweight of booked and unbooked cases were $3.022 \pm .477$ Kg and $2.65 \pm .594$ kg. P value unbooked case $gr < 0.05$ which is significant. All 4 cases of intrauterine death belong to unbooked case group.

Among 214 cases (4 cases IUD) 41.9% were required referral to Neonatal unit, booked cases 25.6% and 69.6% were unbooked cases. P value is $< .05$, so highly significant.

Table VII

<i>Referral to neonatal Care unit among booked and unbooked cases(n=214)</i>					
		Required Referral	Referral Not req.	Total	P value
Booked cases	no	34	99	133	0.61
	%	25.6%	74.4%	100%	
UnbookedCases	no	52	29	81	
	%	69.6%	30.4%	100%	
Total	no	86	128	214	
	%	41.9%	58.1%	100%	

Table 8 shows the comparison of postpartum complication between booked and unbooked patients. 30.5% of unbooked cases had post-partum complication and only 16.7% of booked cases have such complication.

Table-VIII

<i>Postpartum complications among booked and unbooked cases (n=218)</i>					
Postpartum complications	Booked cases (n=133)		Unbooked cases (n=85)		P value
	No	%	No	%	
Post partam haemorrhage	9	6.8	11	12.9	0.061
Wound infection after operation	8	6.0	8	9.2	
Puerperal sepsis	6	3.9	7	8.4	
Total	23	16.7	26	30.5	

Discussion

Lack of access to antenatal care has been linked to increased mortality and morbidity for mother and baby. In this study, a positive correlation between unbooked mothers with adverse fetomaternal outcome was observed.

There is no doubt that the uses of maternal health services improve reproductive outcomes.⁶

In this study, 60.9% of patients have four or more antenatal care which is more than 31%, that has been describe by Bangladesh demographic and health survey³.

This is may be due to study was done in short period of time and conducted in tertiary level hospital with well-equipped Gynae and obstetric department. But 39.1% cases are un booked .It is the reason for concern for all care providers .

Though socio –demographic factors have association of patient having four or more antenatal care ,but mean age of both this group is about 24.05 ± 5.5 and 25.44 ± 5.4 , there is no significant difference between the age group. This also supported by Jaleel R, Khan A study at Pakistan⁷.

But Gross et al⁸ showed that advanced age group had more antenatal care then young age group.

In the present study the socio- economic status has no significant role among women receiving antenatal care but educational status had. This may due to number of study population. The result was not consistent with others. Fawcus SR et al⁹ and Chigbu B et al¹⁰, Akowuah et al¹¹ showed that a higher percentage of unbooked mothers belonged to lower socio- economic status. The poor economic and education status may make it difficult for women to make informed decisions about using preventive and promotive health services, such as antenatal care.

In interpretation of our results, we found that unbooked mothers had adverse fetal and maternal outcome. But this study showed that the incidence of caesarean section is high between unbooked and booked mothers (72% vs. 61.5%). The reason behind this could be:

Many of the booked patients with complications like pregnancy induced hypertension, post caesarean status, primigravida with breech presentation attends labour room earlier and at the slightest and earlier detection of deviation from normal labour pattern undergo caesarean section.

Many of the booked patients had associated risk factors in the form of once or twice previous caesarean section, bad obstetric history, elderly primigravida not willing for vaginal birth, cephalo pelvic disproportion and contracted pelvis. Such cases were being planned for elective caesarean section but had to be taken as emergency cases as they came in early labour thereby increasing the caesarean section rate in booked mothers. The results is not consistent with Mundhra R et al in India¹². In her study non-booked cases has lower rate of caesarean section than booked cases (28.39% vs. 36.84%) The most important indication for C/S in unbooked cases was prolonged labour with foetal distress followed by obstructed labour. Similar findings have been reported in a study carried out by Danish N¹³.

The commonest maternal morbidity observed in this study is postpartum haemorrhage. This is consistent with other studies presented internationally and locally^{7,10,9}, their incidences being 13.9%⁴, 3.50%⁷ 15.2%⁹. Frequency of postpartum hemorrhage is not far higher in unbooked patients as compared to booked patients in the study

presented. This may be due to smaller sample size. The causes of PPH are prolonged labour, obstructed labour followed by atonic uterus in unbooked cases. In booked cases causes are pre natal like placenta praevia. Wound infection is found about 7.2% of unbooked which is similar with Dinesh et al¹⁴. Mean birth weights of unbooked cases are 2.65 ± 0.595 kg and booked cases are 3.02 ± 0.477 which is much higher. Jaleel R, Khan A⁷. has shown that frequency of birth asphyxia and Low Birth Weight was significantly higher in babies of nonbooked mothers, as was the perinatal mortality rate. Lack of antenatal care was associated with higher incidence of birth asphyxia in a study in Majeed et al.¹⁵ Fatrakul et al¹⁶ has reported inappropriate antenatal care as a risk factor for hypoxic ischemic encephalopathy in newborn infants. Frequency of birth asphyxia, LBW, NICU admissions are significantly higher in unbooked mothers. No case of intrauterine fetal demise was noted in the booked group. Referral to neonatal unit is much higher in my study. This is because of prolonged labour and failed home trial. Though referral to neonatal unit about 66.4% which is similar Mundhra et al¹⁴.

Limitation:

This study was done in short period of time and conducted in tertiary level hospital with well-equipped Gynae and obstetric department. Thus the result does not reflect whole Bangladesh scenario.

Conclusion

We conclude in our study that poor utilization of antenatal care is associated with adverse feto-maternal outcome. Antenatal care and its importance can be implemented through general and health education, developing infrastructure, transport and communication facilities. Hence, targeted, integrated, patient friendly, affordable and accessible health services in the form of Antenatal care need to be delivered in an equitable manner so as to improve the outcome for many women and children. We hope the result of this study will prove the fact that Antenatal care is an important component to ensure successful fetomaternal outcome. Our aim to motivate the health care provider to encourage the pregnant mother for regular antenatal care not only one or two but at least four (according to WHO). Antenatal care is provided free of cost in our institutional service

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