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# Comparitive Study Of Maternal And Fetal Outcome Of Labour In Booked Versus Unbooked Antenatal Mothers In Rural India.

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***Abstract:***
***Introduction:*** *The object of antenatal care consists of care of pregnant women, identification of high risk pregnancies ,her safe delivery and post-natal follow up, and care of her new born infant and maintenance of lactation. Maternal complications and poor perinatal outcome are highly associated with non-utilization of antenatal and delivery care services and poor socioeconomic conditions of the patient, with poorer outcomes in unbooked than booked patients.*
***Aims And Objectives:*** *My study aimed at comparing the sociodemographical characteristics, obstetrical complications, maternal and perinatal outcomes in 500 booked and unbooked mothers who delivered at Mamata General Hospital, Khammam with a view to determine the correlation of maternal and perinatal outcomes.A detailed workup of each case with history, clinical examination and investigations were carried out to know the outcome of labour in booked and unbooked cases. Observations were made in both groups regarding age, parity, socioeconomic status, Anemia, Pre-Eclampsia, Eclampsia, mode of delivery, puerperal complications, perinatal outcome, if any morbidity and mortality of mother and baby.*
***Results:*** *All the complications of pregnancy were seen more in unbooked group. 67.8% of cases had spontaneous vaginal delivery. It was observed that caesarian sections were more among booked group (31.5%). Stillbirths are more in unbooked (6.1%) than in booked group (o.8%). Two neonatal deaths occurred in unbooked group. Puerperal complications were more in unbooked group. Two maternal deaths was seen during this study, one case of chronic rheumatic heart disease with severe Mitral Stenosis and one case of eclampsia could not be saved in spite of all efforts. Both cases were unbooked .*
***Conclusion:*** *With improvement in antenatal, intranatal, postnatal care maternal and neonatal morbidity and mortality can be reduced especially in unbooked patients.*
***Keywords:****Unbooked Antenatal Patients,Maternal outcome,Fetal outcome*

## I. Introduction

In India, women of child-bearing age and children under 15 yrs, together they constitute 59 % of total population. The common goal of obstetrics and pediatrics is to ensure that every pregnancy will culminate in a healthy mother and healthy baby. The object of antenatal care consists of care of pregnant women, identification of high risk pregnancies her safe delivery and post-natal follow up, and care of her new born infant and maintenance of lactation. The identification of high risk pregnancy is most important because it is the first step towards prevention and in many instances therapeutic steps can be taken to reduce risk to the fetus or neonate. Identification of high risk pregnancy and management depends on careful antenatal check-ups and attention to history. Various studies have confirmed the positive influence age and on maternal and perinatal outcomes. Most of the girls marry at an earlier age in this part of India in spite of legislation which has made the legal age of marriage of 21 years. Andhra Pradesh is the only southern State that is comparable with the northern States in terms of incidence of child marriage, with one in 40 persons married below the legal age. Teenagers are more likely to be anemic, and they are at increased risk to have growth-restricted infants, preterm labour, and higher infant mortality, toxaemia of pregnancy, eclampsia, cephalopelvic disproportion. (M. S. Chahande etal)[1]; Bratati Banaerji et al[2]; S.H.Mahavarkar et al)[3]. Abnormal presentations, anemia, IUFD was seen in more in teenage pregnancy. As there are underdevelopments of pelvis and CPD in teenagers the numbers of caesarean sections were high (Tripathy S et al). Studies indicate that in pregnancy after 35 yrs, women are at increased risk for obstetrical complications, multiple pregnancy, hypertensive disorders, antepartum hemorrhage and diabetes mellitus as well as perinatal morbidity and mortality (Gilbert et al[4]; V.N.Amarin et al[5]; A.T.Abu-Heija et al)[6].

Maternal complications and poor perinatal outcome are highly associated with non-utilization of antenatal and delivery care services and poor socioeconomic conditions of the patient, with poorer outcomes in unbooked than booked patients. Various studies have confirmed the positive influence of antenatal care on maternal and perinatal outcomes irrespective of other maternal characteristics, such as age and parity. Ekwempu et al[7], in a study on the influence of antenatal care on pregnancy, found that antenatal care was associated with a

three-fold reduction in perinatal loss and virtual elimination of foetal loss from stillbirth. Health-seeking behavior, as evidenced from the literature, may be related to health knowledge and consciousness of the individuals, and may have implications for health status and outcomes. In the light of the current situation in India, it is pertinent to determine and contextualize the relationship between the booking status of mothers and maternal health outcomes. The findings from such studies have implications for planning and implementing interventions that are relevant for maternal health problems reduction. My study aimed at comparing the sociodemographical characteristics, obstetrical complications, maternal and perinatal outcomes in booked and unbooked mothers (i.e. antenatal care attendees and non-attendees) who delivered at Mamata General Hospital. Khammam with a view to determine the correlation of maternal and perinatal outcomes.

**Aims And Objectives Of The Study**

It has been observed that the numbers of un-booked cases are still high in spite of all efforts to conduct antenatal checkups in the hospitals and sub centers attached to the hospitals. The Aims of the study are: To compare the sociodemographical characteristics, obstetrical complications and perinatal outcomes in booked and unbooked delivered mother, to determine the correlation of maternal and perinatal outcomes in booked and un booked delivered cases.

## II. Materials And Methods

This was a prospective study done over a period of 3 years (Jan 2012- December 2014). The outcomes of pregnancies of women booked for antenatal care were compared with that of un booked, who delivered in our OBG Department at Mamata General Hospital, Khammam.

For the purpose of this study a mother considered as "un booked" if she had not seen any medical personnel in the hospital throughout her pregnancy, or had two or fewer visits to the antenatal clinic, or was referred to the unit as an emergency, but without any records of her antenatal care being forwarded to the unit. A mother has to attend antenatal clinics on a minimum of three occasions before she is considered booked. This is an arbitrary figure, but is justified by the fact that it is only on second visit that results of tests are available and can be acted upon, in addition it is only after three visits that true trend in progress of pregnancy becomes evident. A random selection of 500 cases of antenatal patients was done. Among 500 cases 238 were booked cases and 262 cases were un booked. These patients were studied during the intra-natal and post-natal period of their hospital stay. In this study for socioeconomic status, patients with personal income were grouped into High class with an income of more than Rs.5,000 per month, Middle class 1,500 – 2,999/- per month, Low class Rs. <500/- per month . (Prasad's classification)

## III. Observations And Analysis Of Results

5oo cases of Antenatal women who were admitted at Mamatha General Hospital, Khammam were studied for maternal and perinatal outcome in booked and unbooked groups. Out of 500 cases 238 (47.6%) were booked and 262 (52.4%) were unbooked group. Each case was analyzed methodically and following are the observations. AGE DISTRIBUTION OF BOOKED AND UNBOOKED PREGNANT WOMEN: The youngest patient recorded in booked group was 17 yrs and in un booked group was 16 yrs. And maximum age recorded in booked group was 38 yrs and in un booked series 36 yrs. The maximum number of cases was in the age group of 20-29 yrs in both groups. 14 cases were above 35 yrs in both groups together. In un booked group younger age group (19.8%) is more in comparison with booked group (15.1%). In pregnant women more >35 yrs booked group (3.4%) is more than un booked group (2.3%). P = 0.019. SOCIO ECONOMIC STATUS: In this study most of the unbooked group belongs low socioeconomic class (61.8%) in comparison to booked group (18.06%). BOOKED AND UNBOOKED CASES GRAVIDITY WISE: In this study ,Maximum number of cases belonged to either primigravida (32.2%), or second gravidae (38.4%) In primigravida unbooked group (35.5%) is more than the booked group (28.6%) As the parity increased booking also increased till third gravida, again in fourth gravida (unbooked-9.9% vs. booked goup5.5%) Fifth gravida (unbooked 3% vs. booked 1.7%) booking was decreased It is also observed that total number of cases decreased as the parity increased. P = 0.034

**Table – 1 Incidence Of Maternal Complications In Booked And Unbooked Cases**

| ANTENATAL COMPLICATIONS | BOOKED | % | UNBOOKED | % | TOTAL | % | P -VALUE |
|---|---|---|---|---|---|---|---|
| **ANAEMIA** | 42 | 17.6 | 220 | 83 | 262 | 52.4 | 0.000 |
| **PRE- ECLAMPSIA** | 16 | 6.7 | 32 | 12.2 | 48 | 9.6 | 0.054 |
| **ECLAMPSIA** | 2 | 0.8 | 14 | 5.34 | 16 | 3.2 | 0.009 |
| **BOH** | 12 | 5.4 | 8 | 3.0 | 20 | 4.0 | 0.366 |
| **APH** | 2 | 0.8 | 4 | 1.5 | 6 | 1.2 | 0.770 |
| **RH-VE** | 4 | 1.6 | 4 | 1.5 | 8 | 1.6 | 0.826 |
| **CHRONIC HYPERTENSION** | 2 | 0.8 | 2 | 0.76 | 4 | 0.8 | 0.685 |
| **HEART DISEASE** | 4 | 1.6 | 12 | 4.58 | 16 | 3.2 | 0.113 |

Out of 500 cases in this study 52.4% of total cases had anemia. In Unbooked group more number of patients had anemia, in comparison to booked group (83% verses 17.6% p-value – 0.000). Incidence of pre-eclampsia was more in unbooked group (when compared to booked group (12.2% verses 6.7%, p-value – 0.054) .Eclampsia was more in unbooked group whereas than booked group (5.34% verses 0.8%, p-value 0.009). Number of patients with bad obstetric history was more in booked group when compared to unbooked group (3%). Heart disease cases were more among unbooked group (4.8%) than booked group (1.6%). Vitamin deficiency observed more in unbooked group (3.8%) than booked group (0.8%).DEGREE OF ANAEMIA IN BOOKED AND UNBOOKED CASES: Out of 500 cases 54.8% had anemia. Out of 238 cases of unbooked group only 22.7% had anemia. No cases of booked group observed with severe degree of anemia. Out of 262 unbooked cases 83.9% had anemia. In this 7.4% of cases had severe degree of anemia $P < 0.001$.

ESTIMATION OF TOTAL SERUM PROTEINS IN BOOKED AND UNBOOKED CASES: Serum protein estimations were done in only 50 cases. 9 cases (60%) out of 15 in unbooked group showed less than 5.5grams% whereas 6 cases (17.1%) had similar level of serum proteins. 29 cases (82.9%) of booked group and 6 cases (40%) of unbooked group had normal level of serum proteins. 95% confidence interval for difference: 0.1163 to 0.7504,t = 2.748 with 48 degrees of freedom; P = 0.008.

**Table –2 Mode Of Delivery In Booked And Unbooked Cases**

| TYPE OF DELIVERY | BOOKED | % | UNBOOKED | % | TOTAL | % |
|---|---|---|---|---|---|---|
| **SPON. VAGINAL** | 152 | 63..87 | 187 | 71.3 | 339 | 67.8 |
| **FORCEPS** | 8 | 3.4 | 15 | 5.7 | 23 | 4.6 |
| **LSCS** | 75 | 31.5 | 55 | 20.99 | 130 | 26 |
| **ASSIST.BREECH** | 2 | 0.8 | 5 | 0.2 | 7 | 1.4 |
| **CEASEARIAN.HYST** | 1 | 0.4 | 0 | - | 1 | 0.2 |
| **TOTAL** | 238 | | 262 | | 500 | |

Among 500 cases 339 cases (67.8%) had spontaneous delivery. Forceps delivery was more in unbooked group (5.7%) than booked group (3.4%) LSCS was more in booked group (31.5%) than unbooked group (20.99%). Caesarian hysterectomy was done in one booked case due uncontrolled hemorrhage.

**Table – 3 Indications For Casearian Section**

| **INDICATION** | **BOOKED** | **%** | **UNBOOKED** | **%** | **TOTAL** | **%** |
|---|---|---|---|---|---|---|
| **PREVIOUS LSCS WITH CPD** | 24 | 10.08 | 14 | 5.3 | 38 | 7.6 |
| **CPD** | 15 | 6.3 | 14 | 5.3 | 29 | 5.8 |
| **FETAL DISTRESS** | 21 | 8.8 | 11 | 4.1 | 32 | 6.4 |
| **PLACENTA PREVIA** | 2 | 0.8 | 1 | 0.4 | 3 | 0.6 |
| **PRE-ECLAMPSIA WITH ABNORMAL BPPS/DOPPLER** | 10 | 4.2 | 8 | 3 | 18 | 3.6 |
| **OBSTRUCTED LABOUR** | 0 | - | 2 | 0.8 | 2 | 0.4 |
| **ACC.HAEMORRHAGE** | 1 | 0.4 | 2 | 0.8 | 3 | 0.6 |
| **BREECH** | 2 | 0.84 | 1 | 0.4 | 3 | 0.6 |
| **THREATENED RUPTURE** | 0 | - | 1 | 0.4 | 1 | 0.2 |
| **TRANVERSE LIE** | 0 | - | 1 | O.4 | 1 | O.2 |
| **TOTAL** | 75 | | 55 | | 130 | |

Out of 500 cases, 130 cases underwent L.S.C.S for various reasons. Previous LSCS with CPD (10.08%) were more among booked group than unbooked group (5.3%).Incidence of Cephalopelvic disproportion was same in both groups. Indication of fetal distress was more in booked group (6.3%) than unbooked group (6%). 3% unbooked group and 4.2% of booked group of pre-eclampsia with abnormal BPPS were posted for L.S.C.S. Two patients (0.8%) of unbooked group were admitted with obstructed labour and underwent L.S.C.S. But no similar cases present in booked group. One case (0.4%) of unbooked group with threatened rupture had Caesarian section.

**Table – 4 Perinatal Outcome In Booked And Unbooked Cases**

| | **BOOKED** | **%** | **UNBOOKED** | **%** |
|---|---|---|---|---|
| **LIVE BORN** | 236 | 99.1 | 246 | 93.08 |
| **IUFD** | 2 | 0.8 | 16 | 6.1 |
| **LBW (<2.5%)** | 6 | 2.52 | 34 | 13 |
| **CONGENITAL ANAMOLIES.** | 1 | 0.42 | 3 | 1.14 |
| **EARLY NEONATAL DEATH** | 0 | - | 2 | 0.7 |

Among 262 unbooked groups, there were 246 (9.08%) live births, 16 (6.1%) babies were still born whereas only 2 babies (0.8%) in booked group were stillborn. Number of Low birth weight in unbooked group were 34 (13%) in comparison to only 6 babies (2.52%) in booked group. Incidence of congenital anamolies was

1.14% in unbooked and o.42% in booked group. 2 (0.7%) babies could not be saved as the cases present late in obstructed labour.

**Table – 5 Complications In Puerperium In Booked And Unbooked Cases**

| S.NO. | COMPLICATION | BOOKED | % | UNBOOKED | % |
|---|---|---|---|---|---|
| 1 | **PUERPERAL SEPSIS** | 6 | 2.5 | 18 | 6.9 |
| 2 | **WOUND INFECTION** | 3 | 1.3 | 12 | 5.04 |
| 3 | **URINARY TRACT INFECTION** | 3 | 1.3 | 8 | 3.05 |
| 4 | **DVT** | 0 | - | 1 | 1.4 |
| 5 | **PULM.EMBOLISM** | 0 | - | - | - |
| 6 | **POST PARTUM ECLAMPSIA** | 2 | 0.84 | 4 | 1.53 |
| 7 | **MATERNAL DEATHS** | 0 | | 2 | |

Puerperal sepsis in unbooked group (6.9%) was more than booked group (2.5%). 12 cases (5.04%) of unbooked group and only 3 cases (1.3%) of booked group had wound infection. Deep Vein Thrombosis of one unbooked case observed. Post partum eclampsia was seen 4 cases (1.53%) of unbooked group and 2 cases (0.84%) of booked group. TUBECTOMY ACCEPTORS IN BOOKED AND UNBOOKED CASES: Out of 500 cases 64 cases (12.8%) were sterilized. Para 2 and 3 group had maximum number of tubectomy. In booked group with 2 living children more patients (8%) are sterilized in comparison to unbooked group. P = 0.037

## IV. Discussion

More than 500,000 women die of childbirth every year worldwide at present. One woman dies and twenty other suffer from injury or disease because of childbirth every minute. Of these, India alone accounts for about 100,000 maternal deaths every year, with an overall maternal mortality rate of 407 per 100,000 live births. The rate varies from state to state, being highest in Utter Pradesh and Rajasthan (707 and 677 respectively) and lowest in Tamil Nadu and Gujarat (76 and 29 respectively). The maternal health programme, a component of the Reproductive and Child Health Programme, aims at reducing maternal mortality to less than 180 by the year 2010 by the provision of essential and emergency obstetric care, facilitating referral transport, safe abortion and the detection and treatment of reproductive tract infections. (Ian Donald).

Most maternal deaths are due to hemorrhage, anemia and puerperal complications, obstructed labour, PIH, anemia and infections and the vast majority would be preventable with universal access to antenatal care and an effective system or referral. The question why some women do not attend antenatal clinics and how this affects the outcome of pregnancy is of clinical importance because of the persistently high proportion of unbooked patients delivered. The majority of the unbooked mothers take up little of the doctors' time because they receive minimal or no antenatal care and spend only a short time in hospital for delivery. Little attention has been given in the literature to the problems of unbooked mothers, but many hospitals note that they make a substantial contribution to perinatal morbidity and mortality. The initial aims before assessing the fetal outcome were to attempt to discover the basic reasons for their failure to attend antenatal clinics.

In this study 500 cases were randomly selected .Out of these 238 (47.6%) women were booked and had regular antenatal checkups either in this hospital or outside by a private practitioner. Remaining 262 (52.4%) women were unbooked and came only for delivery. Even patients who had some complication or other in their past pregnancy were not able to attend the hospital or go to a Doctor because of domestic problems or due to economic difficulties. This study aimed to compare the sociodemographical characteristics, obstetrical complications and foetal and maternal outcomes in pregnant women booked for antenatal care and delivery in our centre were compared with that of women unbooked for antenatal care in our centre or brought in during the course of labour because of onset of complications, but without any records of her antenatal care being forwarded.

In this study total 88 primigravida were under 19 yrs. The youngest was sixteen years in unbooked and seventeen years in booked group. 36 patients (15.1%) of booked cases, 52 patients (19.8%) of unbooked group were<19 yrs who was admitted for delivery. This showing a negative association between age and booking This finding of negative association between age and booking as recoded in this study is correlating with the observation of Alisha Tucker, et al[8] study, done at North Middlesex, London, and Owolabi et al[9] study done in Nigeria, and Fawcus et al[10] study, Harare Hospital Zimbabwe. But in other study by R.A. Hamilton et al[11], Coronation Hospital, and Johannesburg did not show the same pattern of negative association between age and booking status. In this study only 14 cases of total booked and unbooked were above the age of 35yrs. (2.8% of 500 cases). The decrease in number of cases as the age advances could be due to decreased fertility rate as the age advances, and increased availability of family planning methods.

In this study a higher proportion of unbooked patients belong to low socioeconomic class (61.8%) in comparison to booked group (18.06%). This study observations are correlating with findings of Owolabi et al study, R.A.Hamilton study, and Failing F.et al[12] study**,** regarding most of the unbooked patients belongs to low

socioeconomic class. Low socioeconomic status makes it difficult for women to take decision about using preventive and promotive services, Because of cost of treatment in centers with high standards of care, poor pregnant woman not utilizing the facilities. They were not taking services of public sector because of distance, and unawareness of hazards. Under these unfavorable conditions women may choose to seek care in substandard facilities. The incidence of pregnancy complications is certainly increased in women who belong to less affluent communities and deliver in poor resource settings, resulting in a much higher toll in terms of maternal morbidity and mortality.

In this study maximum number of cases belonged to either primigravida (32.2%), or second gravidae (38.4%). Primigravida unbooked group (35.5%) cases were more than the booked group ( 28.6%) cases. As the parity increased booking also increased till third gravida. Again in fourth gravida (unbooked-9.9% vs. booked goup5.5%) and Fifth gravida (unbooked 3% vs. booked 1.7%) booking was decreased. This study findings correlating with the Observations of Pokharel et al[13] that primigravida and high parity women are more in unbooked group. It is observed that more number of cases in primigravida were unbooked, may be because of younger age group. It is also observed that as the parity increased total number of cases decreased. Only 2.4% grand multiparas were present out of 500 cases. The number of cases decreased as the parity increased may due to wide publicity of Family Planning Programmes, and adoption of small family norm. In booked grand multipara it is because of loss of previous children or because of waiting for a male child whereas in unbooked grandmulti were unaware of the hazards and staying in remote tribal areas and not attending antenatal checkups or because they had previous successful deliveries and therefore felt overconfident and refused to seek antenatal care.

In this study pregnancy complications were observed more in unbooked group which include Anemia, Pre-eclampsia, Eclampsia, Antepartum hemorrhage , Heart diseases. In our study 52.4% of total cases had anemia of 17.6% was in booked group and 83% in unbooked group. 77.3% of booked cases had more than 10gms of haemoglobin in comparison to 16% of unbooked group. 7.4% of unbooked group had less than 8 gm% haemoglobin that required blood transfusions during obstetric management. This could have been avoided by supplemental iron and detecting the cause and correction of defect for anemia if they had come to antenatal checkups. This study findings correlating with observations of study by Owolabi A.T et al, where anemia in unbooked cases was 39.2% and in booked cases 19%. Anemia is one of the major public health problems in the developing world. It may antedate conception, often aggravated by pregnancy and delivery. One of the primary aims of antenatal care is to prevent and treat anaemia during pregnancy, since the safety of labour and the puerperal state depend upon the state of the patients' hematological reserve.

In this study Total serum proteins estimation was done in 50 randomly selected cases 36% had serum proteins between 5.5 – 6gms 20% had serum proteins between 6 – 6.5 gms. 14 cases (28%) of booked group had serum proteins more than 6 gms, whereas only 3 cases (6%) of unbooked series had serum proteins more than 6gms. (normal range 6 – 7 gms). To meet the additional demand during pregnancy, calories are necessary for energy, and whenever caloric intake is inadequate, protein is metabolized rather than being spared for its vital role in fetal growth and development. Low socio-economic status is associated with reduced dietary intake of protein during pregnancy. Malnutrition and under -nutrition are major public health problems in our country. It is recognized that infants, growing children pregnant and lactating women constitute vulnerable segments to under-nutrition.

Pre-eclampsia was observed in 12.2% of unbooked group and 6.7% of booked group. Eclampsia was seen in 0.8% of booked group whereas 5.34% of unbooked group which is more in incidence in comparison to foreign countries. One case of unbooked primigravida with twin gestation with IUD with eclampsia could not be saved in spite of all efforts. Findings of this study correlating with observations by Ekwempu CC et al[14]**,** observed eclampsia in 5.5% and pre-eclampsia 7.5% in unbooked antenatal group and in study by Owolabi A.T et al, preeclampsia /eclampsia was 7.9% in unbooked group and 2.1% in booked group.

In this study 3% of cases in unbooked group were with bad obstetric history. In spite of disappointment in previous pregnancy they did not attend the hospital during present pregnancy. 5.4% of booked group were with bad obstetric history and they booked and had regular antenatal checkups to avoid another miscarriage. They were thoroughly investigated for the cause. In this study Antepartum hemorrhage in unbooked group was 1.5% and in booked group 0.8%. In Owolabi study the incidence was more but two groups were comparable. In Owolabi study APH in unbooked cases was 15.8%, in booked cases 3.1%. Incidence of Abruption four times higher in multipara as compared to primigravida The frequency is reported to be higher in women of lower socioeconomic status (Ian Donald).

Cardiac disease is an important cause of maternal mortality and morbidity, both in the antepartum and postpartum period. The overall incidence of heart disease in pregnancy is under 1%, but tertiary referral centre see more cases. In our study, there were total 18 cases (3.6%) out of which 4 (1.6%) cases were booked. These patients were admitted during antenatal period. Under strict supervision and cardiologist treatment antenatal intranatal postnatal, peurperium was uneventful in these patients. 14 cases (4.58%) were unbooked and had

occasional antenatal checkups. One unbooked case could not be saved in spite of all efforts.67.8% of cases had spontaneous delivery (unbooked 71.3% vs. booked 63.87%). In remaining 32.2% cases needed interventions. In 5.7% of unbooked group 3.4% of booked group, Forceps was applied due to various indications which were more in unbooked cases.

Caesarian section was done in 26% of cases. Repeat section was done in 7.6% of cases when indicated. In remaining cases for various indications caesarian section was done. Percentage is slightly high in booked group 31.5%, whereas 21% in unbooked group. Percentage of Elective sections in booked group was slightly high. Because of early recognition of cephalopelvic disproportion, malpresentation, patients who had booked early with poor obstetric history and known medical complication elective sections done to minimize maternal and fetal morbidity and mortality Emergency indications for caesarian sections, Forceps deliveries were more among unbooked cases. These finings were in correlation with findings of study done by R.A. Hamilton. Indications for caesarian section like obstructed labour, threatened rupture were more in unbooked group which could have been prevented with regular antenatal checkups. This finding of our study agreed with observations of S.N.OBI et al[15], in a study carried out in Nigeria. Caesarian hysterectomy was done in booked case for atonic post partum hemorrhage in a placenta previa case. Pregnancy outcomes in unbooked mothers, in patients referred with complications in late stages were significantly poor. In our study Intra uterine fetal deaths among unbooked group were 6.1%, they were due to accidental hemorrhage, cord complications, fetal distress, which could have been saved if they had come early in labour. Intra uterine fetal deaths were only 2 (0.8%) in booked which was due to antepartum hemorrhage. There were 13% babies of LBW in unbooked group and 2.52% babies in booked group. Proper antenatal care could have prevented some complications. Congenital anamolies were present in 1.14% of live births of unbooked group. One baby with spina bifida was one among the twins in a booked case and mother was not interested in termination of pregnancy. Two early neonatal deaths occurred in unbooked patients. These two cases presented late in obstructed labour, making surgical intervention inevitable because of fetal distress with attendant high perinatal mortality.

In our hospital all spontaneous delivery cases were discharged after 48 hrs of delivery. Patients who had episiotomy and stayed for 4-5 days were given prophylactic antibiotics and discharged on 5$^{th}$ day of peurperium. But patients who had episiotomy were also discharged at request with in 2-3 days after delivery with prescription of antibiotic course. All abdominal delivery cases were kept in hospital for a minimum period of 8 days after the operation depending on the case recovery

In our study puerperal complications were also observed more in unbooked group. Puerperal sepsis was seen more in unbooked group (6.9%) in comparison to of booked cases (2.5%). Wound infection in unbooked (5.04%) cases was more and of severe degree and 4 of these cases required resuturing , whereas 12 cases stay was prolonged. 1.3% in booked group had wound infection. Urinary Tract Infection found to be one of important cause puerperal pyrexia. In this study Urinary Tract Infection was detected in 3.05% of unbooked group and in 1.3% of booked group. One case (0.4%) of unbooked had deep vein thrombosis and received anticoagulants. Post partum eclampsia was seen in 0.84% of booked group, and in 4 cases 1.53% of unbooked group which again depends on proper antenatal care. Two maternal deaths and two early neonatal deaths occurred in unbooked patients during the study period.

In spite of intensive counseling, sterilization is not so encouraging in booked and unbooked patients because of fear and most of the patients say either they want to come after six months or want to get it done in government hospital. With all the above reasons total of 67 patients accepted sterilization out of which 36 cases were booked and 28 cases were unbooked. In tubectomised booked cases 8% were para 2, 4.2% cases were para 3, 2.1% cases of para 4 and 0.8% cases of para 5. In unbooked tubectomy cases 2.3% cases were para 2, 4.6% cases were para 3, 2.7% cases were para 4, 1.2% cases were para 5. In many of the cases sterilization operations were combined with LSCS.

## V. Conclusions

The majority of patients 52.4% were unbooked. Only 47.6% of cases attended for regular antenatal checkups. Unbooked cases had high proportion of patients with teenage group, low socioeconomic status, primigravida, high parity, and undernourished than booked cases. Incidence of pregnancy complications anemia, pre-eclampsia, eclampsia, antepartum hemorrhage is more in unbooked cases. Patients with previous bad obstetric history booked early. Spontaneous vaginal delivery was similar in both groups. Elective caesarian section rate was high in booked group because of early recognition of complications, booking of patients with previous caesarian section for recurrent indication and operations when indicated to save the mother and baby in other conditions. Caesarian sections done in obstetric emergencies were more in unbooked group. There was slight increase in incidence of other operative deliveries in unbooked group. Incidence of puerperal complications was more in unbooked group. Two maternal deaths also recorded in unbooked group. Even tubectomy acceptors were less among unbooked group when compared to booked group.

In conclusion our study showed a positive correlation between unbooked mothers and increased risks of maternal and foetal outcomes. Improvement in the socioeconomic conditions, health education and awareness creation is mandatory for teenagers and their parents and husbands. There is an urgent need o promote antenatal care utilization, good quality antenatal care and delivery services.

There is an urgent need to promote antenatal care utilization, ensure supervised delivery by trained attendants and eliminate deliveries under substandard conditions. Improvements in the socioeconomic conditions and extension of Arogyasree health insurance scheme to primi and second gravida and adequate funding of the health sector are needed. The most expenditure goes to develop more comprehensive care for those already in the system. This problem of underutilization of service is in part a reflection of the ignorance or apathy of the people but is also a result of the inadequacies of the service itself. To entice the lower social classes to attend clinics, the services need to be tailored to the needs to the users. The following measures are advocated to improve the situation ; the improvement of emergency obstetric health care facilities and other infrastructure at the primary health care level such as blood transfusion facilities, transportation provision; adequate monitoring of health workers at primary health care level by doctors at secondary and tertiary institutions , regular training and retraining courses for general medical practioners on management of common obstetric emergencies and the need for timely referral and, greater effort to eliminate quackery. Remedial approaches would need to take into account are universal basic education especially for women to improve female literacy; domestic activities restricted during pregnancy, women should be given decision making power within the family, education of partners.

Strengthening and proper supervision of JSY, and ASHA advocated. With improvement in antenatal, intranatal, postnatal care maternal and neonatal morbidity and mortality can be reduced and MILLENIUM DEVELOPMENT GOALS cad be achieved.

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