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Original Article

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Study of Maternal and Perinatal Outcome of Referred Patients in Tertiary Care Hospital

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ABSTRACT

Background: Pregnancy and child birth particularly in high risk patients need proper antenatal care and timely referral to decrease maternal and perinatal morbidity and mortality. Early identification, initiation of early treatment and timely referral are the components for success of maternal and fetal health intervention.
To identify the pattern of obstetric referral and primary reasons of referral, so as to implement measures to reduce maternal and perinatal morbidity and mortality.
Aim of study: To assess Maternal and Perinatal outcome in referred patients.
Materials and methods: Prospective observational study done in all obstetric patients referredto the department of OBG at Sri Siddhartha Medical Hospital, Tumakuru for duration of 24 months.
Results: The proportion of referral cases to the tertiary care institute is 6.5%. Majority (48.7%) of referred cases were from private hospitals and PHC (44%) showing lacunae in the emergency obstetric care given. Majority were in the age group 21-30 constituting about 72%. In present study, there was unavailability of ambulance in 56.7% of cases for transport. Most (92.89%) of the patients were not accompanied by any medical assistance during transport. Most common cause of referral is previous LSCS (28.7%) followed by PROM (16%). In our study, 10 % of the patients required blood/blood products transfusion. Majority delivered by LSCS (92.7%).There were 1 (0.7%) maternal mortality in present study & behind these there were total 12(8%) near miss cases which provide valuable information on the quality of antenatal care at the periphery. 42.9% of all neonates had respiratory distress in this study. Total NICU admission rate was 42.7%. Neonatal mortality documented in present study was 0.7%.
Conclusion: Proper training of health personnel at peripheral centres and timely referral along with detailed referral slip or prior information of high risk cases helps in early and effective interventions thereby decreasing maternal and perinatal morbidity and mortality. Health education and awareness by mass media and non-government organisations can improve the health and social status of women in rural areas.

Key Words: *Maternal morbidity, Neonatal morbidity, Referral*

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INTRODUCTION

In India, women of reproductive age (15–45 years) constitute 22% of the population. Antenatal care (ANC) is systematic assessment and follow up of pregnant ladies, that includes educating them, counselling them, proper screening and treatment. Along with this ANC also identifies high risk patients and there by helps in timely referral to tertiary care hospitals to make it available the best possible health facilities to mother and foetus. There is a close relationship of maternal health and child health to the health of family and of family health to community. However in developing countries like India majority of the people live in rural areas which lack vital obstetric care and due to poor ANC, many pregnant women land up in obstetrical emergencies. It is an accepted estimate that 40% of pregnants will have obstetric complications [1].

Obstetric complications account 514,000 women's lives each year. The National Health Policy(NHP) of India has predicted a target of MMR of less than 70 per lakh births by 2030 and to reduce neonatal mortality to at least as low as 12 per thousand live births by 2030 under Goal-3 of Sustainable Development Goals. The Maternal Mortality Ratio in India has declined from 130 in 2014-16 to 97 per lakh live births in 2018-2020. India has accomplished the NHP target for MMR of less than 100/lakh live births and is on the right track to achieve the SDG target of MMR less than 70/ lakh live births by 2030.Karnataka stood in 8th position in the country in achieving SDG target.Almost all of these lives would be saved if good quality Emergency obstetric care (EmOC) is made available 24 hours a day, 7 days a week [2].

Most of the complications occur randomly both in high and low risk patients. Life threatening complications can occur any time before delivery, during and after delivery and quite often they can neither be predictable nor

preventable. However, if they are identified and addressed early and if the basic and comprehensive emergency obstetric services are provided to them near by their homes; most of the maternal and perinatal deaths can be averted [3]. Understanding this, it is recommended to electively refer pregnant women with previous caesarean section, transverse lie, Breech, multiple gestation, severe anaemia and hypertension for delivery to a tertiary care centre where all facilities to deal with complications are available.

The World Health Organization (WHO), in its 2010 Monitoring Indicators for Health Systems Handbook, defines Emergency Obstetric Care availability as "physical provision of health services" and EmOC readiness as "capacity to deliver health services" [4]. Studies on availability of EmOC have traditionally differentiated between comprehensive EmOC (this includes surgical services (caesarean section) and blood transfusion along with basic obstetric services) and basic EmOC (non-surgical obstetric interventions). So, now the focus is on EmOC along with ongoing maternal health care as EmOC services are of paramount importance in reducing maternal mortality and morbidity.

There by referral system is definitely an essential component for providing access to essential obstetric care because 60% of Indian population lives in rural setups where unfortunately health care provision is poor.Timing is critical in preventing maternal mortality & morbidity. Maternal mortality do not occur all of a sudden if a community based health care system is in place and recognizes problems promptly & transporting a woman to a health care facility where she receives appropriate & timely treatment [5].Timely referral and intervention of high risk cases and complicated obstetric cases can reduce maternal morbidity and avoid maternal mortality [6].

With this introduction, this study has been undertaken in the OBG DEPARTMENT, SRI SIDDHARTHA MEDICAL COLLEGE to analyze maternal and perinatal outcome in labour cases initially handled outside our institution and then referred here.

MATERIALS AND METHODS

Source of data:

This is a prospective observational study conducted in the Department of Obstetrics and Gynecology at Sri Siddhartha Medical College, Tumakuru during the period from December 2020 to December 2022 after getting approval from the Ethical Committee among the women admitted as per the inclusion and exclusion criteria after proper counselling and after getting their consent.

Inclusion Criteria:

All referred ANC cases at our tertiary care institute >28 weeks gestation

Exclusion criteria:

- Booked cases at our tertiary care institute
- Referred cases <28 weeks gestation
- Postpartum referrals
- Self-referrals.

Method of collection of data:

All the cases were interrogated with the use of following methods.

- Thorough history taking
- Complete physical and obstetric examination.
- Basic investigations like CBC, blood grouping, urine routine and microscopy, obstetric ultrasound.
- Case specific investigations will be carried out as mandated by clinical condition of the patient.
- Management of the patient will be documented, whether conservative or interventional.
- Mode of delivery will be noted, vaginal or operative.
- Maternal outcome in the form of maternal morbidity & mortality will be noted.
- Neonatal outcome will be documented under following headings: term\preterm, live\still birth, birth weight, stay in NICU, clinical course of baby in first 7 days, complications if any will also be noted.

STATISTICAL ANALYSIS:

The data will be entered in Excel spreadsheet and Statistical software SPSS version -20 will be used for the analysis. Descriptive statistical analysis will be analyzed as follows: Categorical data will be analyzed as percentages. Inferential statistics will be analyzed by using Chi-square test,'t' test. A probability of <0.05 will be considered as statistically significant.

RESULTS:

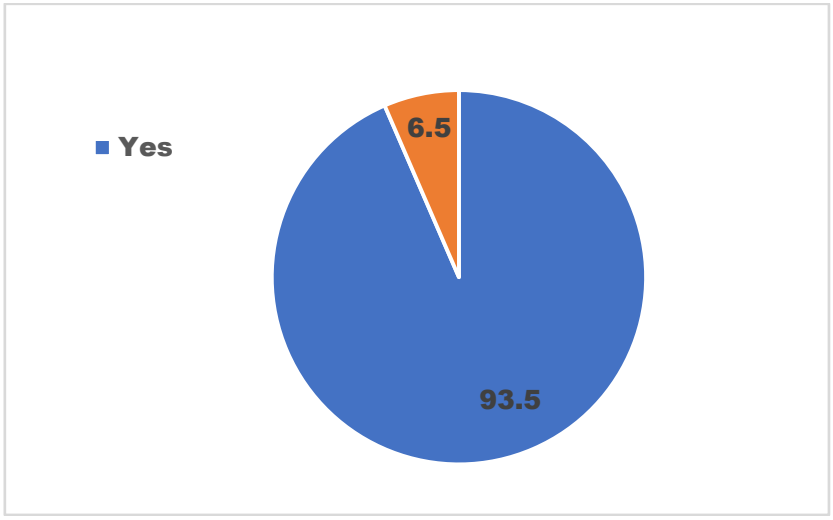

Figure 1: Proportion of referred cases to the hospital

In the present study, of the total 2296 deliveries conducted at the tertiary care hospital considered during the study duration of eighteen months, 150 cases(6.5%) were found to be referred from near by health facilities. Hence, all these 150 cases were included in this study and were further analysed.

Table 1: Age wise distribution of study participants (n=150)

Age group (in years)	Frequency	Percentage
≤20	21	14
21-30	108	72
>30	21	14
Total	**150**	**100**

In the present study, majority of the study participants 108 (72%) belongs to 21-30 years group followed by ≤20 years and more than 30 years of age 21(14%) each. The mean age of study participants was 25.57 ± 4.53 years within the range of 18 to 38 years.

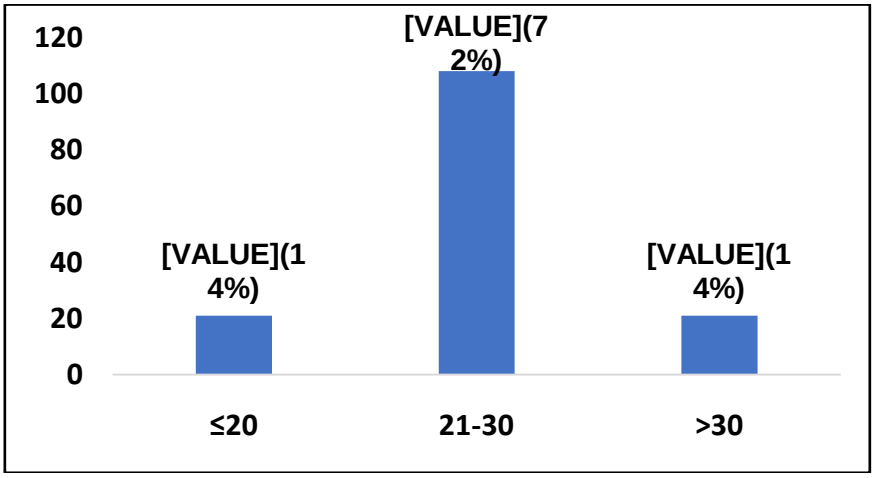

Figure 2: Age wise distribution of study participants (n=150)

Table 2: Distribution of study participants based on Socioeconomic status (n=150)

Socioeconomic status	Frequency	Percentage
Upper middle	36	24
Lower middle	99	66
Upper lower	15	10
Total	**150**	**100**

Out of 150 study participants, 99(66%) of them belonged to lower middle class followed by 36(24%) belonged to upper middle class and the least 15(10%) belonged to upper lower class as per modified BG Prasad classification of socioeconomic status.

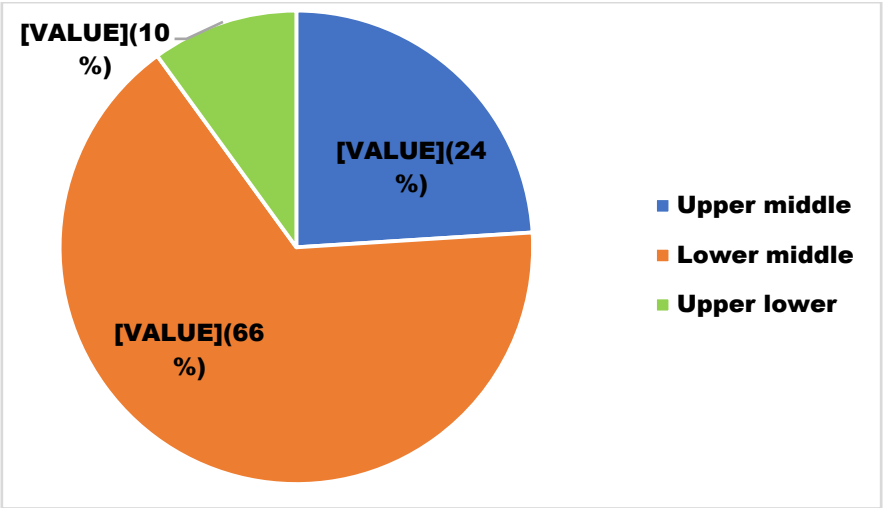

Figure 3: Distribution of study participants based on Socioeconomic status (n=150)

Table 3: Registration of study participants (n=150)

Registration	Frequency	Percentage
Booked outside	143	95.3
Un-booked	7	4.7
Total	**150**	**100**

In this study majority of the study subjects 143(95.3%) registered their pregnancy outside the present tertiary care hospital while 7(4.7%) were unbooked.

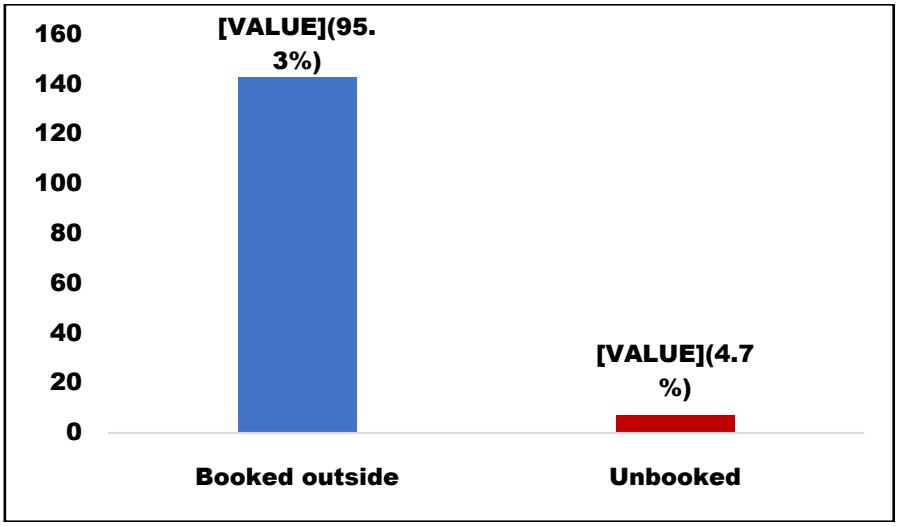

Figure 4: Registration of study participants (n=150)

Table 4: Distribution of study participants based on parity (n=150)

Parity	Number	Percentage
Primi	65	43.3
Multi	85	56.7
Total	**150**	**100**

Among the 150 study participants, majority of them 85(56.7%) were multi gravida and 65(43.3%) of the pregnant women were primi.

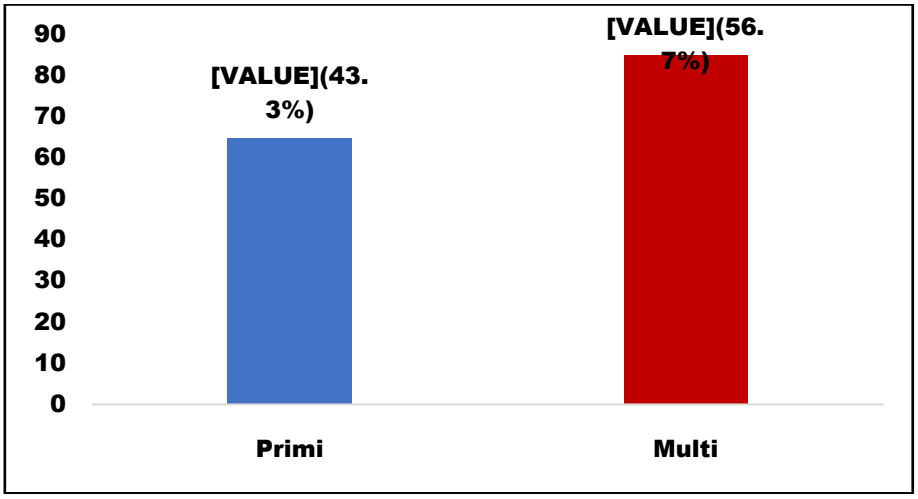

Figure 5: Distribution of study participants based on parity (n=150)

Table 5: Distribution of study participants according to gestational age (n=150)

Gestational age	Frequency	Percentage
28-36	51	34
37-40	91	60.7
>40	8	5.3
Total	**150**	**100**

In the present study, majority were found to be with gestational age between 37-40 weeks 91(60.7%) followed by 51(34%) were between 28 -36 weeks and the least 3(5.3%) came with more than 40 weeks of gestational age.

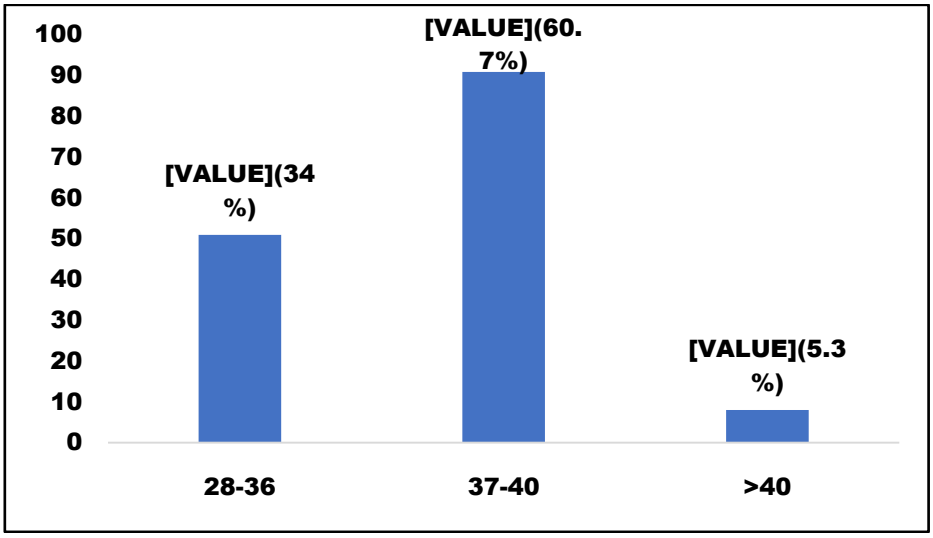

Figure 6: Distribution of study participants according to gestational age (n=150)

Table 6: Centre from where the study participants were referred (n=150)

Centre of referral	Frequency	Percentage
PHC	66	44.0
DC	11	7.3
Private Hospital	73	48.7
Total	**150**	**100.0**

Out of 150 participants, majority were referred from private hospitals 73(48.7%) followed by Primary health centre (44%).7.3% patients got referred from District Hospital (DH).

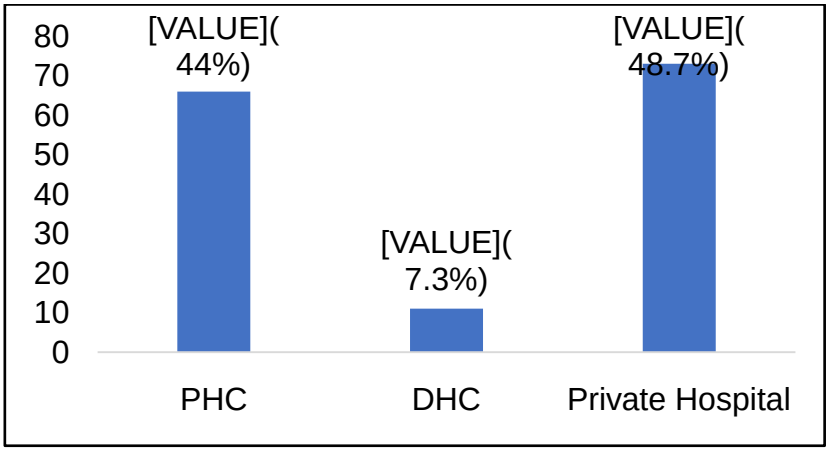

Figure 7: Centre from where the study participants were referred (n=150)

Table 7: Distribution of study subjects based on distance travelled to reach the tertiary care hospital (n=150)

Distance travelled (in Kms)	Frequency	Percentage
<10	18	12
11-30	102	68
31-70	30	20
Total	**150**	**100**

In the present study, majority of the study participants 102(68%) travelled 11-30 Kms to reach tertiary care hospital. 30(20%) study participants travelled 31-70 Kms and 18(12%) travelled <10 Kms to reach tertiary care hospital.

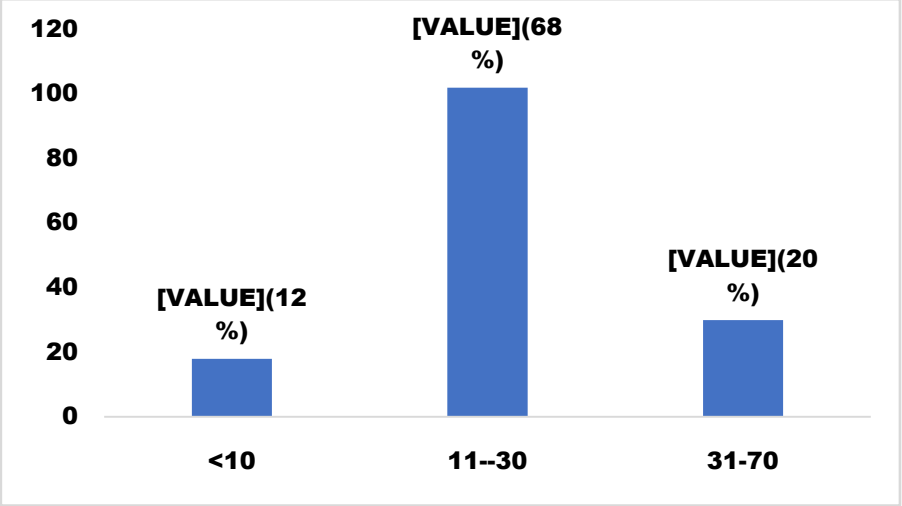

Figure 8: Distribution of study subjects based on distance travelled to reach the tertiary care hospital (n=150)

Table 8: Distribution of study participants according to mode of transport to the tertiary care hospital (n=150)

Mode of transport	Frequency	Percentage
Ambulance	65	43.3
Private vehicle	84	56.0
Bus	1	0.7
Total	**150**	**100.0**

Most of the participants in this study 84(56%) who came to the hospital by means of private vehicle followed by ambulance as the mode of transport 65(43.3%). Only one participant reached the a hospital by means of bus.

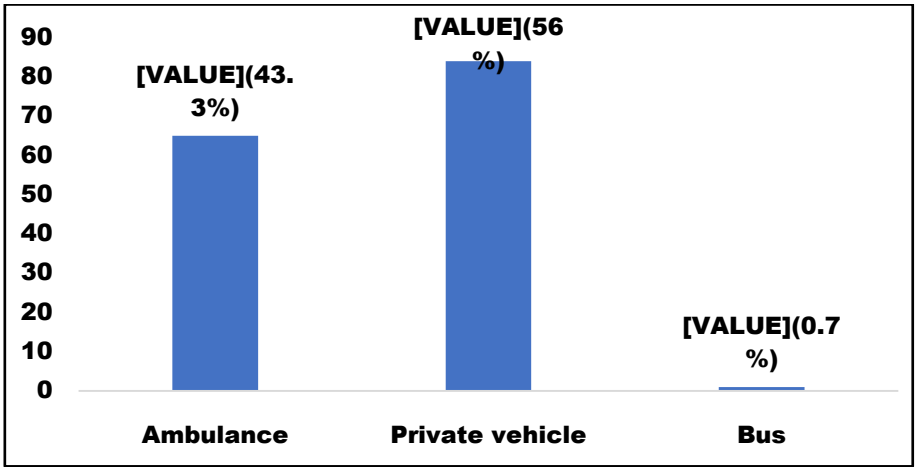

Figure 9: Distribution of study participants according to mode of transport to the tertiary care hospital (n=150)

Table 9: Distributionofstudysubjectsbasedontheintervalbetweenthetimeofreferral to the time of arrival (n=150)

Referral - Arrival interval (hours)	Frequency	Percentage
<1 Hour	91	60.7
1-2 Hours	39	26
>2 Hours	20	13.3
Total	**150**	**100**

Among the 150 study participants, majority of them 91(60.7%) reached within a one hour from the referred hospital followed by 1-2 hours 39(26%). 133.3% took >2 hours to reach the present tertiary care hospital.

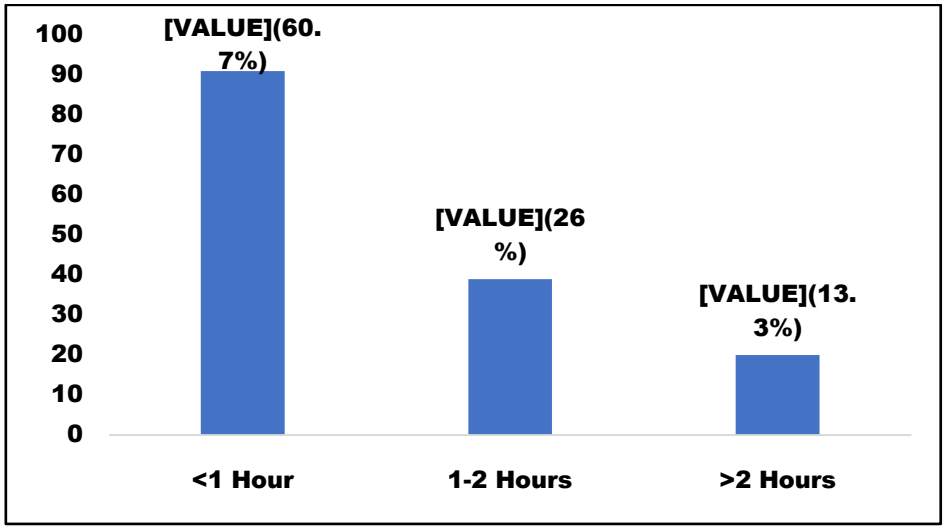

Figure 10: Distributionofstudysubjectsbasedontheintervalbetweenthetimeofreferral to the time of arrival (n=150)

Table 10: Reasons for referral among the study participants (n=150)

Reasons for referral	Number	Percentage
Previous LSCS	43	28.7
PROM	24	16.0
Preeclampsia	18	12.0
Anaemia	15	10.0
Oligohydramnios	10	6.7
IUGR	10	6.7
Eclampsia	8	5.3
Polyhydramnios	6	4.0
Anhydramnios	4	2.7
Obstructed labour	3	2.0
CPD	3	2.0
Antepartum Haemorrhage	3	2.0
Non progression of labour	3	2.0
Total	**150**	**100.0**

In the present study, majority of the referred patients 43(28.7%) had history of previous LSCS followed by PROM 24(16%), Preeclampsia was observed in 18(12%) and 15(10%) presented with anaemia. Other reasons of referral includes oligohydramnios, IUGR, eclampsia, polyhydramnios, anhydramnios obstructed labour, CPD, antepartum haemorrhage and non progression of labour.

Table 11: Distribution of study participants based on Mode of delivery (n=150)

Mode of Delivery	Frequency	Percentage
LSCS	139	92.7
Vaginal	11	7.3
Total	**150**	**100**

Out of total 150 patients, majority had delivery By LSCS (92.7%) while normal vaginal delivery was observed in 7.3% of study participants.

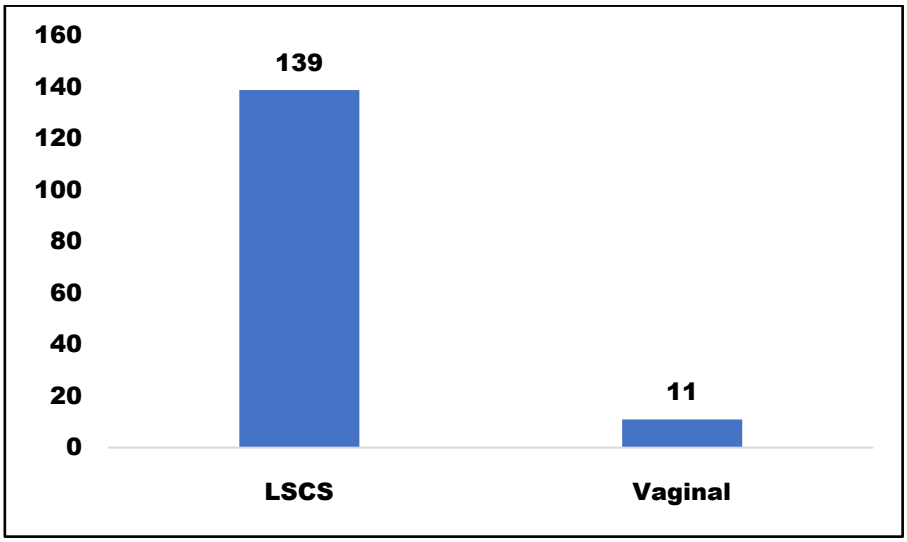

Figure 11: Distribution of study participants based on Mode of delivery (n=150)

Table 12: Duration of hospital stay among study participants (n=150)

Duration of hospital stay (in days)	Frequency	Percentage
1-3	5	3.3
4-7	141	94
>7	4	2.7
Total	150	100

Most of the study participants 141(94%) stayed for 4-7 days at the hospital followed by 1-3 days 5(3.3%). The least 4(2.7%) stayed for more than 7 days in the hospital.

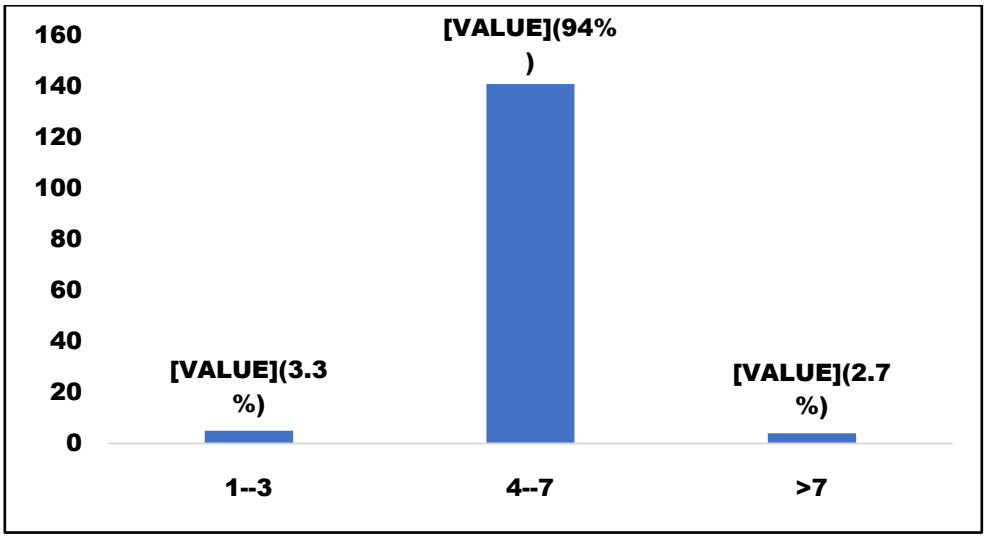

Figure 12: Duration of hospital stay among study participants (n=150)

Table 13: Distribution of study participants based on outcome of pregnancy (n=150)

Outcomes of pregnancy	Frequency	Percentage
Pre term	47	31.3
Term	102	68
Dead	1	0.7
Total	**150**	**100**

In the present study, majority of them 102(68%) had term babies and pre term babies 47(31.3%). Out of 150 participants, one pregnant women died.

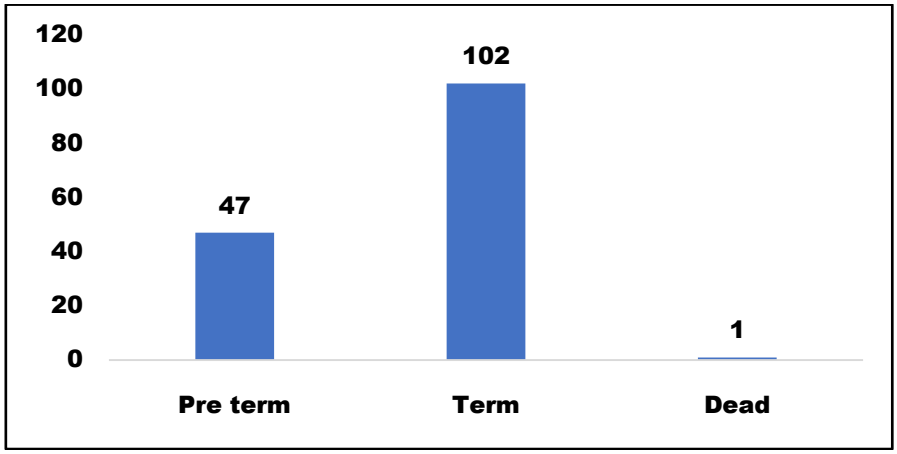

Figure 13: Distribution of study participants based on outcome of pregnancy (n=150)

Table 14: Intraoperative finding among study participants

Intraoperative findings	Frequency	Percentage
Adhesions	13	8.7
Scar dehiscence	10	6.7
Ascites, Arcuate uterus	1	0.7
Bicornuate uterus with rudimentary horn	1	0.7
Couvelaire uterus	2	1.3
Fibroid at the lower segment	1	0.7
Placenta, foetus in abdominal cavity	1	0.7
Total	**29**	**19.3**

Out of 150 patients, 13(8.7%) had adhesions, 10(6.7%) had scar dehiscence and Couvelaire uterus was observed in 2(1.3%) of study participants.

Table 15: Postnatal complications among study participants

Postnatal complications	Frequency	Percentage
Postpartum haemorrhage	6	4.0
Uterine angle extension	2	1.3
Paralytic ileus	1	0.7
Peripartum cardiomyopathy	1	0.7
Puerperal pyrexia	1	0.7
Maternal death due to intracerebral haemorrhage	1	0.7
Total	**12**	**8.0**

Among the 150 study participants, 12(8%) had postnatal complications. Among them 6(4%) had postpartum haemorrhage.

Table 16: ICU stay of mother after delivery (n=150)

ICU stay of mother	Frequency	Percentage
1 day	12	8.0
2 days	1	0.7
3 days	3	2.0
4 days	2	1.3

5 days	1	0.7
Nil	131	87.3
Total	**150**	**100**

Among the 150 study participants, majority mothers 131(87.3%) did not have any ICU stay while 19(12.7%) stayed in ICU.

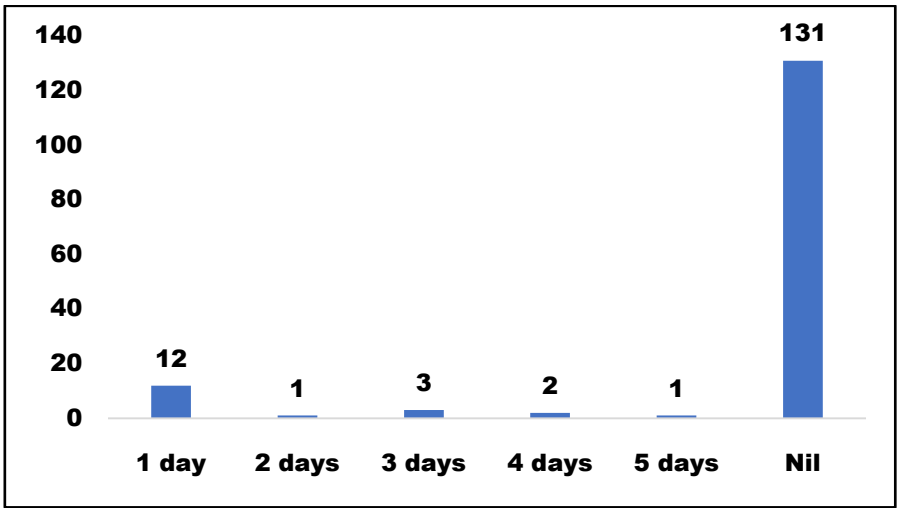

Figure 14: ICU stay of mother after delivery (n=150)

Table 17: Distribution based on neonatal outcomes (n=150)

Neonatal outcome	Frequency	Percentage
Intra Uterine Death	6	4.0
Died	1	0.7
NICU under observation	4	2.7
NICU with O2	7	4.7
NICU with CPAP	44	29.3
NICU Surfactant	2	1.3
NICU with ventilator	7	4.7
Mother's side	79	52.7
Total	**150**	**100**

In the current study, majority of the participants had good neonatal outcome with 79 (52.7%) babies staying by mother's side. 42.7% of babies were staying in NICU and 1 baby died and intra uterine death was seen in 6(4%).

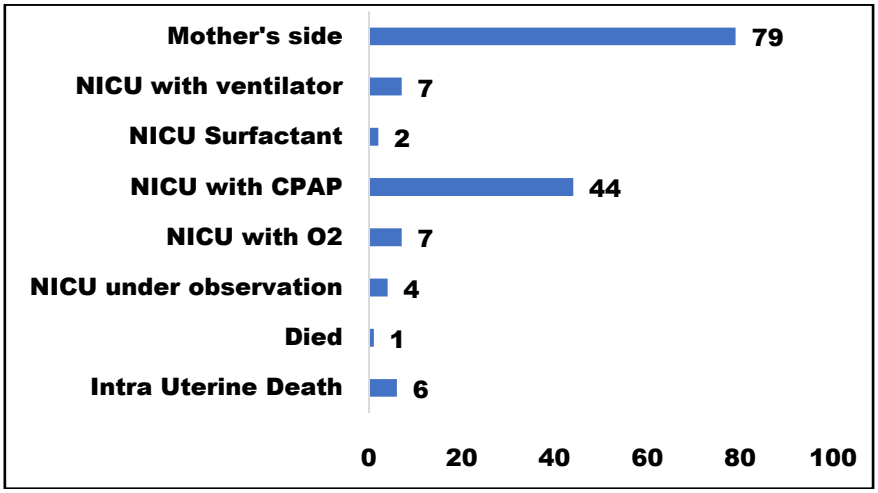

Figure 15: Distribution based on neonatal outcomes (n=150)

Table 18: Reasons for NICU stay in the current study (n=68)

Reason for NICU stay	Frequency	Percentage
Respiratory distress	27	42.9
MAS	3	4.8

LBW	16	25.4
Neonatal sepsis	2	3.2
Asphyxia	6	9.5
Neonatal hyperbilirubinemia	1	1.6
TTNB	2	3.2
Congenital pneumonia	1	1.6
Necrotising enterocolitis	2	3.2
NIL (under observation)	8	12.7
Total	**68**	**100.0**

Out of 68 neonates requiring NICU stay, majority 27(42.9%) stayed due to respiratory distress followed by low birth weight 16(25.4%). Asphyxia was observed in 6(9.5%) and MAS seen in 3(4.8%) babies. 8(12.7%) neonates were under observation.

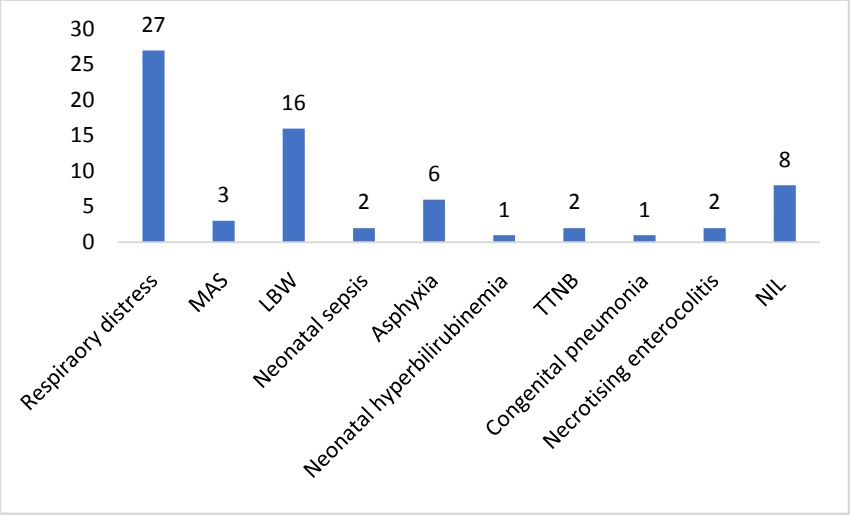

Figure 16: Reasons for NICU stay in the current study (n=68)

Table 19: Association of complications among study participants with referral – arrival interval (n=150)

Referral - Arrival interval (in hours)	Complications among mothers		Total	Chi-square df P-value
	No	Yes		
≤ 1 hour	79(75.2%) (72.5%)	26(24.8%) (63.4%)	105 (70%)	1.16 1 0.28
> 1 hour	30(66.7%) (27.5%)	15(33.3%) (36.6%)	45 (30%)	
Total	**109(72.7%)**	**41(27.3%)**	**150**	

Out of 150 participants 27.3% mothers had complications. Among them 63.4% of participants with ≤ 1 hour referral-arrival interval while 36.6% had complications in the mothers with more than 1 hour referral- arrival interval group. However the observed difference was found to be statistically insignificant (p>0.05)

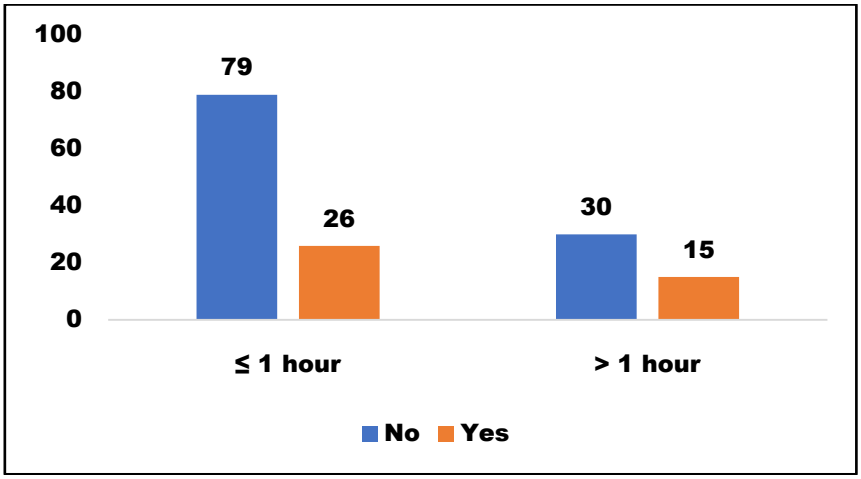

Figure 17: Association of complications among study participants with referral – arrival interval (n=150)

Table 20: Association of abnormal neonatal outcome with referral-arrival interval (n=150)

Referral - Arrival interval (in hours)	Abnormal neonatal outcome		Total	Chi-square df P-value
	No	Yes		
≤ 1 hour	66(62.9%) (83.5%)	39(37.1%) (54.9%)	105 (70%)	14.58 1 0.00
> 1 hour	13(28.9%) (16.5%)	32(71.1%) (45.1%)	45 (30%)	
Total	**79(52.7%)**	**71(47.3%)**	**150**	

In the current study, 47.3% had abnormal neonatal outcomes. Among them 54.9% participants with ≤ 1 hour referral- arrival interval which was slightly higher than participants with referral-arrival interval of more than 1 hour. The observed difference was statistically significant ($p<0.05$).

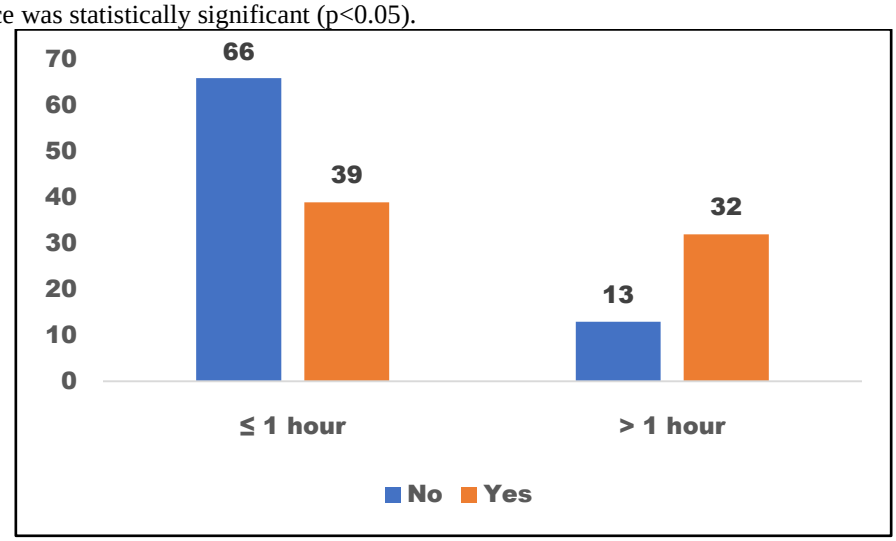

Figure 18: Association of abnormal neonatal outcome with referral-arrival interval (n=150)

DISCUSSION

Maternal mortality is a global issue and remains as an issue of high research and programmatic interest in India and many parts of the developing world because of its high incidence .Many of the global strategies that are planned towards reduction of maternal mortality in developing countries include providing back up prenatal care, Antenatal care and support at the first referral level (primary health centre) for pregnant women. This study was undertaken in a tertiary care medical college hospital, being a major referral center for all the surrounding catchment areas. In this study, a total of 150 pregnant women in labour were referred from health centres at different level such as Primary Health Care centres /CHC ,DH and private hospitals were interviewed .The socio demographical characteristics, reasons for referral ,causes of delay in referral, obstetrical complication, fetal and maternal outcomes in 150 pregnant women brought during the labour were studied.

A total of 2296 deliveries conducted during this study period, among which 150 pregnant women in labour were referred cases from near by health care facilities,the proportion of referred cases 6.5% which is lower than other studies done by Rekha Jakher et al [7] and Gupta PR et al [8] in 2016 were 9.96 % and 15.37 % respectively. Similarly, A study

by sable and patankar [9] in 2015, Pandya and patel [10] in PHC"s of Gujarat and Sharma [11] at Indore (2007) reported referral rate 17.83%, 15.2% and 14.02%.

In our study majority (72%) of the respondents were between 21-30 years, usually considered as low risk group, the present study demonstrates that the majority of the patients that require a referral belong to this age group. Gupta PR et al [8] has age group between 20-30 years as 86.98%. 14 % Teenage pregnancies in our study, this shows that there could be betterment in providing education for this patients which decreases early marriages and the pregnancy more than 30 years were 6.5%.

In the present study, primigravidas were 43.3 % and multigravidas were 56.7%out of which (2%) grand multigravidas are seen.

Around 66% referred cases belonged to lower middle class according to modified BG Prasad classification in our study. Poor economic status may make it difficult for women to make informed decision about Utilisation of health preventive and promotive services, such as antenatal care, particularly in an environment where the national poverty level is high. Women may also choose, under those unfavorable economic conditions, to seek for care in substandard facilities because of the perceived cost of treatment and hospital rates.

In the present study patient who are unbooked were 4.7 %, and booked outside were 95.3 %. Adequate antenatal care and hospital deliveries enable obstetricians to diagnose complications at an early stage leading to early intervention brings about better results.

In our study 60.7% referral was in the gestational age more than 36 weeks , whereas about 34% of the referral was in the group 28-36 weeks of gestation, it was found that some of these cases could have been referred at more appropriate time at early gestational age.

The pattern of referral in our study, majority constitute private health care which was around 48.7%, 44.0 % of the referral was from the PHC level, 7.3% referrals from District Hospital. Majority of referrals was from within the district, followed by referrals from outside the district. The reason for referral from PHC/CHC includes non-availability of trained staff, obstetrician, anesthetist, lack of ICU facilities, lack of facilities to do caesarean section, lack of blood bank services. Similar study conducted by jakher et al [7] (85.32%) and umesh sable et al [12] (80.74%) had maximum referral from government sector which is opposite to our study and also had majority of referral within 20 km (35.79%), where as In our study majority (68%) travelled less than 30 km to reach the tertiary care centre counting for 68%. 20% of patients have to travel more than 30 kms to seek emergency obstetric care ,which is an important contributing factor for maternal and neonatal outcome.

In the present study, it was observed that 56% of cases used private vehicle and those who used Ambulance were 43.3% and reason being fuel deficiency of the ambulance (10.8%), in another on call (14.4%) and relative advice in 9.6% cases. Jakhar et al [7] analyzed that delay in getting transport facility in 21.50%, delay in decision by relative in 9.86% cases and in 8.8 cases the economic constrains that in arrangement. Time interval of reference and reporting depends not only on availability of transport system and distance between the referral and tertiary health centre but also on patient's attitude and her relatives attitude, their awareness and socioeconomic status, thus directly affecting the fetomaternal outcome.

In our study 60.7% of the patient had referral-arrival interval less than one hour, the association of post natal complication within mothers and neonates with referral-arrival interval found to be insignificant in our study, as most patients arrived on time. The time taken to reach from referral hospital to arrival hospital is too long which has lead to poor maternal and neonatal outcome [2], this time delay is because of lack of money, lack of transport facility, ignoring major warning signs, poor road structures and lacking of local support. A Study conducted by Nidhi jha et al [13] showed poor referral most of which were from the PHC and 48% of the cases had referral according to predefined criteria which helped for better intervention.

In the present study, majority of the patient referrals was from previous LSCS (28.7%) followed by PROM (16%) followed by Preeclampsia (12%) and anaemia (10%). Other major causes of referral include oligohydramnios, IUGR, eclampsia, polyhydramnios, anhydramnios, obstructed labour, CPD, non progression of labour and Antepartum hemorrhage. Among those with anemia, 12 patients needed blood transfusion. Similar results are found in the studies of jakhar et al [7], gupta et al [8], studied that non availability of blood transfusion facility in case of severe anaemia at PHC's and CHC's may also contribute to such high percentage of patients being referred to their tertiary care hospitals, which is comparable to our study. Previous LSCS is the reason for referral in 28.7%in our study which is comparable to the study conducted by Gupta PR et al [8].The patient with previous ceasarean section are referred to higher centre from PHC"s and CHC"s due to nonavailability of OT (operation theatre), Obstetrician, anesthetist, trained staff or basic infrastructure deficit where the same reason being noted in our study.

In our study, for majority mode of delivery being ceasarean section being 92.7% and remaining by vaginal (7.3%), which is similar to study by Sorbe et al [14] observed in his study referral status contribute to substantial increased caesarean section rate which was 55% in formally referred, this is less than our study. Lower section caesarean section rate is substantially high in referral cases.

In our study, majority stayed 4-7 days at the hospital and those who stayed more than 7 days were 2.7 %. Maternal complication were seen in 6.7% of cases .The most common complication was postpartum hemorrhage which were surgically managed with uterine artery ligation, B Lynch suturing and other complications were Uterine angle extension, Paralyticileus, Puerperalpyrexia, Peripartum cardiomyopathy .One maternal mortality is seen due to HELLP syndrome with DIC with Intracranial hemorrhage.12.7 % of the patients needed ICU management.

Perinatal complication were seen in 45.3% who had NICU stay, the most common reason being respiratory distress (42.9%), low birth weight and pre-term care(25.4%), Birth asphyxia (9.5%), me conium aspiration syndrome (4.8%), kept under observation (12.7%). The total mortality rate was 0.7%.

CONCLUSION

Referral is coordinated movement of healthcare seekers through the health system to reach a high level of care in a small and often fatal window of time .It involves factors like, decision to seek the healthcare and the perception of risk by the women herself and her family members, case in reaching health facility, financial stability, identification of high risk factors by health personnel and timely decision about intervention and referral. In our study 93.5 % patient were booked at the centre from where they were referred again showing need for improvement in health service at the periphery. Nearly 14% of patient have to travel from more than 30kms to seek an emergency obstetric care which is an important contributing factor for maternal and perinatal outcome. Around 13.3% patient reached to medical college upto 2 hours. If this referral arrival interval is long, which lead to poor feto-maternal outcome. Timely referral , along with detailed referral slip or prior information of referred cases will help in early and effective interventions .Even those arising with a referral card has incomplete information regarding duration of admission ,treatment given and reason for referral .Hence a universal referral proforma has been devised. All the peripheral health sectors should be well equipped with vehicles on road transport facility. 43.3% utilized 108 ambulance from referral facility and 56% have used private vehicle. Arranging a private vehicle during obstetric emergency takes time and cost money. This informative data show improvement in transport facility for the referral patients as comparative to past years. The traditional birth attendants should be trained properly and their main contribution should be for health promotion rather than disease intervention (especially in complicated cases). In the present study majority of cases referred for Previous LSCS, PROM, hypertensive disorder of pregnancy, Anemia. The patient with previous caesarean section referred to higher centres from PHC/CHC due to unavailability of operation theatre, Gyneacologists, anaesthetic. This may be due to nonavailability of blood transfusion in case of severe anaemia at PHC center and CHC, but also economic factors in case of the referral from private sectors. Hence we must give emphasis on correction of anemia in ANC care ,so that the women can bear the loss during delivery. This can be achieved by measures like iron supplementation to adolescent girls, early ANC registration of pregnant women, deworming and educating women about contraception and birth spacing. Hypertensive disorders of pregnancy was commonest cause of high -risk obstetric patients, which can be better dealt at tertiary care centre. Also administration of 1st dose of magnesium sulphate must be done in all cases of eclampsia and severe preeclampsia prior to referral. Partogram (Labour Care Guide) can be maintained by paramedical staff at PHC/CHC, which will be helpful before mother goes in for obstructed labour and for timely referral. Improving female education, health education and awareness at community level by mass media and non-government organizations can improve the health and social status of women in rural areas. Every women has right to get good quality healthcare and now it is high time to update our practice of maternal and child health (MCH) care services ,because there was a challenge of Millennium development by 2015,which still remains challenge.

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