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A QUALITATIVE KNOWLEDGE ASSESSMENT OF PREGNANT WOMEN ON PRETERM BIRTH IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Preterm birth is the birth occurring after 20 weeks and before 37 weeks of gestation. Premature birth has been associated with several factors such as history of preterm birth, anemia, high catecholamine levels in the maternal urine, tobacco consumption, Premature Rupture of Membranes (PROM), High Blood Pressure (HBP), vaginal bleeding, inter gestational interval of ≤ 1 year, urinary tract infection (UTI), lack of prenatal care, inadequate prenatal care, maternal age less than 20 years, maternal age over 35 years, oligohydramnios, history of induced abortion, preeclampsia, twin pregnancy and advanced maternal age. The objective of the present research is to assess the knowledge of pregnant women between 6 and 8 months on preterm birth in a tertiary care hospital, Erode. The study ventures to determine the factors behind the preterm birth and also to evaluate the demographic characteristics of the preterm mothers and their preterm infants. It was a prospective observational study conducted over a period of 6 months in 250 pregnant women. The study included pregnant women above 24 weeks of gestation, because the survival rate of the babies is about 35-50% according to the fetal viability study conducted in 2005 and excluded all pregnant women below 24 weeks of gestation. We have randomly selected 220 pregnant women for assessment of knowledge about preterm birth. After knowledge assessment we followed the cases during the study period. During follow up period, 20 women had preterm birth, 175 women had term birth and 25 women were under follow up. By the end of the study, we separately analyzed thirty preterm birth cases to find out the factors behind the preterm birth. The preterm birth had occurred mostly between 32 and 35 weeks of gestation. Out of fifty preterm cases, 5(10%) mothers had preterm labour between 20-24 weeks of gestation, 7(14%) mothers had preterm labour between 25-28 weeks of gestation, another 10(20%) mothers had preterm labour between 29-31 weeks of gestation, 20(40%) mothers had preterm labour between 32-35 weeks of gestation, and 8(16%) mothers had preterm labour between 35-37 weeks of gestation respectively. In our study, prenatal outcome of low birth weight was seen in 45(90%) preterm babies and 5(10%) babies having above low birth weight (LBW > 2500 grams). Our study concluded that pregnant women possessed inadequate knowledge about preterm birth. So health education should be provided during antenatal visits in prenatal wards and in outpatient visit in the hospital which would be beneficial and helpful to reduce neonatal mortality and morbidity.

KEYWORD: ***Preterm, Pregnant women, Gestation week, Risk factors, Antenatal care, Delivery.***

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INTRODUCTION

Premature birth is a syndrome associated with neonatal morbidity, which has adverse consequences for long-term health and the sum of complications during the lives of premature infants causes high neonatal mortality rates.[1]Preterm birth (PTB) is the major cause of death and disability in the developed world among children up to 5 years of age .It is also the leading single cause of global perinatal mortality and morbidity; approximately, 15 million babies are born preterm each year worldwide, and a million of these children die.[2] Preterm infants are also at a significantly greater risk of serious perinatal complications.[3] While many children born preterm lead a normal and healthy life, a significant proportion experience life-long disability and health issues.[4] The impact of preterm birth on individuals, families, and society is considerable, as are the healthcare costs associated with perinatal care and life-long disability.[5]In developed countries, about 30% of preterm deliveries are iatrogenic with the remainder being spontaneous, either with intact membranes or following Preterm Prelabour Rupture of Membranes (PPROM).[6] Many different causes of spontaneous PTB (sPTB) have been identified and the most common of which in singleton pregnancies are likely to be intrauterine inflammation (IUI)/ intrauterine infection, placental malperfusion or other placental abnormalities.[7] Inflammation appears to be a common mechanism underpinning multiple etiologies.[8] Successful prevention of PTB requires a multifaceted approach, combining public health and educational programs, lifestyle modification, optimization of obstetric healthcare, effective prediction and diagnostic modalities and the application of effective, targeted interventions.[9] Preconception interventions in the form of weight reduction, nutritional supplementation, pharmaceutical management and smoking cessation, etc.,[10] The main aim of the study is to assess the knowledge of pregnant women between 6 and 8 gestational months on preterm birth in a tertiary care hospital, Erode. The study objective is to determine the factors behind the preterm birth and to evaluate the demographic characteristics of the preterm mothers and preterm infants.

METHODS

It is a prospective observational study conducted over a period of 6 months. Ethical approval was obtained from the institutional review board (JKKNCP/ ETHICS_PRACTICE/ 018PDS12). We have randomly selected 220 pregnant women for preterm knowledge assessment. After knowledge assessment, we have followed the cases during our study period. During follow up period 20 women had preterm birth, 175 women had term birth and 25 women were under follow up. The standard questionnaires were used. The questionnaires were originally developed by Levison et al [8]. Sources of data from inpatients include patients' case record, medication chart, lab reports, mother's file, antenatal card and direct interview of the pregnant women. Data collection was done in the data entry form that included information regarding patient demographics and clinical characteristics such as age, marital status, religion, maternal level of education, maternal occupation, income, medical history, mode of delivery, sex of the baby, birth weight of the baby, pregnancy outcome, hemoglobin level, HIV status, ante partum hemorrhage, co morbidity etc.

Inclusion criteria

17-35 years pregnant women were included pregnant women above 24 weeks of gestation were included.

Exclusion criteria

Pregnant women already existing with any diagnosed complications like proteinemia, hypertension, diabetes, cervical incompetence, genitor urinary infections, antepartum hemorrhage, history of sexually transmitted disease, medical or surgical condition and jaundice.

RESULT AND DISCUSSION

Results

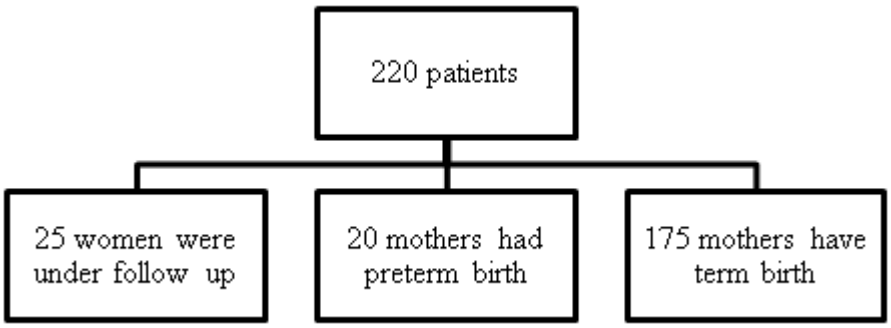

Table 1
Knowledge assessment of preterm birth

S.No.	STATEMENT	AGREE (%)	DISAGREE (%)
1	Normal length of pregnancy is 38-40 weeks	90(40.9%)	130(59.09%)
2	Women came to know her due date: a) after scanning b) physician's opinion c) umbilical cord protruded d) calculate from LMP	78(35.4%)	142(64.5%)
3	A premature baby born before 37 weeks	80(36.3%)	140(63.6%)
4	An earliest age preterm baby can survive is 30 weeks	30(14.6%)	186(84.5%)
5	The lowest weight of a premature baby can survive is 1500gms.	71(32.2%)	149(67.7%)
6	Causes of early labor pain or vaginal bleeding are following respiratory distress, preeclampsia, low amniotic fluid and anemia	58(26.3%)	162(73.6%)
7	Probable complication that a women would face after a preterm delivery are a) back pain b) fluid leakage vagina c) postpartum hemorrhage	78(35.4%)	142(64.5%)
8	Premature babies have complications such as a) Jaundice b) anemia c) low birth weight d) respiratory asphyxia	95(43.1%)	125(56.8%)
9	Whether first trimester need more antenatal care	70(31.8%)	150(68.1%)
10	Would you think antenatal care is need for pregnant women	35(15.9%)	185(84.09%)
11	If a woman presents herself with premature contractions need immediate medical assistance	60(27.2%)	160(72.7%)
12	Should much care needed for a preterm baby like a) baby needs to be kept warm b) baby should be breastfed	48(21.8%)	172(78.1%)

Apart from 220 cases, we also collected 30 cases of preterm birth to find out the factors behind the preterm birth. So totally 50 preterm cases had been collected to identify the factors regarding preterm birth.

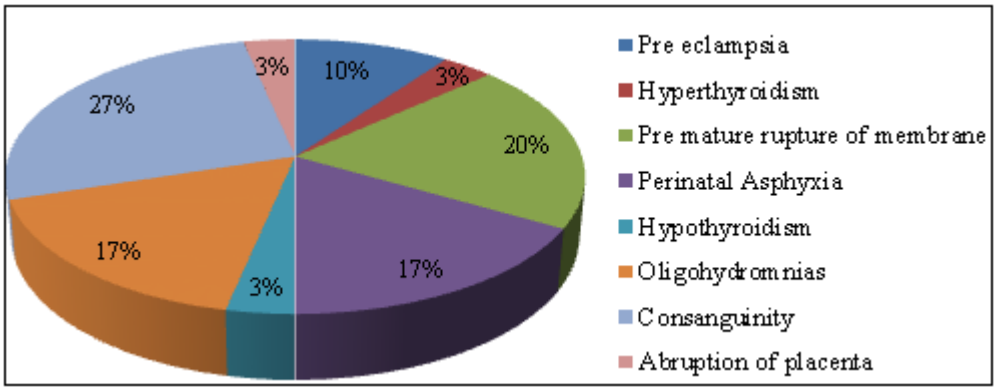

Figure 1
Factors behind Preterm Birth for mothers

In a total of 50 preterm cases, 30 cases having known factors behind the preterm birth while the rest of the 20 cases with unknown factors causing preterm birth.

Table 2
Preterm and full term infants, characteristics and socio-demographic, obstetric and health history, and social characteristics of mothers of full-term and preterm infants.

Characteristics	Preterm group (n=50)	Term group (n=175)
Age in years (mothers)		
17-20	14(28%)	31(17.7%)
21-25	23(46%)	83(47.2%)
26-30	10(20%)	44(25.1%)
31-35	3(6%)	17(9.7%)
Antenatal care		
Once	1(2%)	2(1.1%)
Twice	3(6%)	4(2.2%)
Thrice	9(18%)	13(7.4%)
Four times	18(36%)	46(26.2%)
More than 4	19(38%)	110(62.8%)
Educationlevel		
1-5	4(8%)	17(9.7%)
6-10	14(28%)	51(29.1%)
11-12	19(38%)	64(36.5%)
Graduate	13(26%)	43(24.5%)
Areaofresident		
Urban	19(20%)	70(40%)
Rural	31(62%)	105(60%)
Occupationofmother		
House wife	33(66%)	122(69.7%)
Employee	12(24%)	46(26.2%)
Student	5(10%)	7(4%)
Respiratorydistressinbabies		
Yes	38(76%)	12(6.8%)
No	12(24%)	163(93.1%)
Mode of delivery		
SVD	17(34%)	62(35.4%)
LSCS	33(66%)	11364.5%)
Paritydistribution		

Primi	32(64%)	91(32%)
Second	15(32%)	68(38.8%)
Multi	3(6%)	16(9.1%)
Pregnancyoutcome		
Singleton	46(92%)	172(98.2%)
Twin / more	4(8%)	3(1.7%)
Weightofthebabies		
<2.5Kg	45(90%)	36(20.5%)
>2.5kg	5(10%)	139(79.4%)

Table 3
Gestational week distribution and survival status of the baby

Gestation weeks	No. of preterm cases (n=50)	No. of preterm babies died	No. of preterm babies alive
20-24	5(10%)	3	2
25-28	7(14%)	3	5
29-31	10(20%)	1	10
32-35	20(40%)	1	21
35-37	8(16%)	-	8

DISCUSSION

Based on knowledge assessment, most of the pregnant women showed poor knowledge regarding the preterm birth. When we assessed their knowledge, about 98(44.5%) women answered as 34-38 weeks of gestation are normal length of pregnancy, 90(40.9%) women answered as 38-40 weeks of gestation. When asked about their due date, 84(58.1%) pregnant women answered as physician opinion. Almost 80(36.3%) pregnant women answered as baby born before 30 weeks are considered as the preterm gestational age, 138(62.7%) women answered that baby born in 34th week of gestation can survive more. Based on body weight of the baby, 100(45.4%) answered as 2kg was the lowest body weight for the baby to survive and 100(45.4%) women answered as 2kg was the body weight for preterm babies. About the etiology behind the preterm birth, 58(26.3%) answered as respiratory distress followed by low amniotic fluid was said by 51(23.1%) women and gestational diabetes by 38(17.2%) women. While asked about the complication faced by the preterm delivered mothers only 78(35.4%) answered as backache, lower back pain and complication faced by preterm babies were cerebral palsy or premature as answered by 95(43.1%) women. Based on antenatal care 140 (63.6%) answered as after 6 months, 70(31.8%) answered as after 7 months, 170(63.6%) women did not attend antenatal care due to laziness and 50(52.7%) women did not have the facilities to attend the antenatal care based on the questionnaire given in table 1. There are so many factors behind the preterm birth in our study. Most common causes of preterm birth were preeclampsia, oligohydramnios and consanguinity (Figure 1). Our study result was supported by the previously conducted study by Surve et al., (2016)[11] who found that the prevalent causes of prematurity were anemia 173 (28.41%), PROM 150 (24.63%). Other prevalent causes were oligohydramnios 80 (13.14%), multiple pregnancy 57 (9.36%), and gestational diabetes mellitus 9 (1.48%).[12] Most consanguineous marriages were between first cousins (51.7%), whereas 30.3% was between uncle and niece, 4.1% were between first cousins once removed (e.g., first cousins removed by one generation) and 13.8% were between second cousins.[13] These are the major factors influencing the preterm birth and their complications. In our study, 17-35 years of women were included. The 23(46%) women belonging to the age group of 21-25 years showed most preterm birth followed by 16(28%) mothers of age range from 26-30 years, 14(20%) mothers of age range from 17-20 years and 5(10%) mothers of age range from 31-35 years as mentioned in Table 2. Our result is supported by the previously conducted study by Rao KS, et al., (2017)[14] where maximum number of mothers were of age group 17-19 years (81.6%), followed by age group 14-16 years (18.4%). The age is also the factor of preterm birth because teenage pregnancy may be the factor of getting preterm birth. The preterm birth had occurred mostly between 32-35 weeks of gestation. Out of 50 preterm cases, 5(10%)

mothers had preterm labor between 20-24 weeks of gestation, 7(14%) mothers had preterm labor between 25-28 weeks of gestation, another 10(20%) mothers had preterm labor between 29-31 weeks of gestation, 20(40%) mothers had preterm labor between 32-35 weeks of gestation, and 8(16%) mothers had preterm labor between 35-37 weeks of gestation respectively (Table 3). The mean gestational age for preterm birth in our study was 33.5 weeks. Our study result is supported by the study conducted by Chowdareddy, et al. (2016)[15] where the mean gestational age at birth for the newborns was 33.3 weeks. The mortality rate of preterm babies with less than 28 weeks gestation accounted for 8% of all preterm deaths whereas neonates with 28-34 weeks and 33-37 weeks accounted to 41% and 50% of mortality. Early gestational week may influence the survival status of the preterm baby. Among 50 preterm mothers, only 18(36%) women attended antenatal care for 4 times. Among 175 term mothers, 46(26.2%) women attended antenatal care 4 times among term mothers (Table 2). Our study result is supported by the previously conducted study by Rao et al., (2017)[14] which included that found the incidence of LBW among mothers who received average quality of ANC was 18.5%. It declined to 13.5% in mothers who had good quality of ANC. Due to inadequate antenatal care some of the pregnant women having the chance of getting preterm birth. Preterm mothers who completed 1-5 standard were 4(8%), completed 6-10th standard were 14(28%) and completed 11-12th standard or diploma were 19 (38%) and graduated were 13 (26%). And in term mothers completed 1-5 were 17(9.7%), completed 6-10 were 51(29.1%), completed 11-12 were 64(36.5%) and graduated were 43(24.5%)(Table 2). Our study result is supported by the study conducted by Rashmi et al., (2016)[12]. The preterm births were found in 8.4% of the graduate mothers, 2% of the mothers who studied up to diploma or intermediate, 0.7% of the mothers who studied up to high school and 10% of the mothers who studied up to middle school. Low level of education also affects the pregnant women in preterm birth because they have less knowledge regarding preterm birth. In our study, nearly 31(62%) of the preterm patients were from rural area and 19(38%) from urban area. But in term patients, 70(40%) were urban and 105(60%) were from rural (Table 2). Residential area also affects the pregnant women due to their low economic status and poor hygiene. In our study nearly 33(66%) preterm mothers were housewives and only 12(29%) were employed. But in term mothers, 122(69.7%) were housewives and 46(26.2%) were employed (Table 2). Our study result is similar tothe study conducted by Nair et al., (2000), where most of the mothers were housewives (78.7%).[13] Considerable proportions (17.8%) of mothers were engaged in unskilled work. Due to less physical activity also, pregnant women have a chance of getting preterm birth. In our study, about 38(76%) of preterm babies had respiratory distress and about 12(6.8%) term babies had respiratory distress (Table 2). Our study result is supported by the study conducted by Sehgal et al., (2014)[16] where neonatal RDS (65%) was the most common cause of morbidity in extremely low birth weight babies. Respiratory distress in the fetus can be a cause for pregnant women to deliver a preterm baby.Most of the preterm births have undergone cesarean section nearly 33(66%) mothers had LSCS (lower segment caesarean section) and 17(34%) mothers had SVD (spontaneous vaginal delivery) (Table 2). Our study result is compared to the study conducted by Rather et al., (2015) Out of 475 preterm births, 312 (65.7%) of the women had a caesarean section, 163 (34.3%) of the women had delivered vaginally. Preterm babies may have so many complications and our study shows that the pregnant women had undergone caesarean section due to certain complications. In our study, 32(64%) preterm cases had primigravida, 15(30%) preterm cases had second gravida and only 3(6%) preterm cases had multigravida (Table 2). Our study result is supported by the study conducted by Rao et al., (2016).[14]Majority of teenagers were primigravid (79.23%) and multigravida (20.76%). This states that the majority of the pregnant women had the chance of getting preterm birth while their first baby was delivered as preterm. In our study prenatal outcome of low birth weight seen in 45(90%) preterm babies and 5(10%) babies having above low birth weight (LBW) (Table 3). Our study result is supported by the study conducted by Rao et al., (2016)[14] where the impact of teenage pregnancy on fetal growth was studied and the majority of the babies born to teenage mothers were of low birth weight (<2500 g) (66.2%), followed by birth weight <2000 g (19.9%), <1500 g (12.6%), <1000 g (1.3%).

LIMITATION

Small sample size is the major limitation in our study. Family income which can be an important determinant in pregnancy outcomes could not be

included under socio demographic characteristics as income could not be verified.

CONCLUSION

The study concluded that the factors behind the preterm birth were consanguinity, premature rupture of membrane, perinatal asphyxia, oligohydromnias, preeclampsia, hyperthyroidism, hypothyroidism, and abruption of the placenta. It was found that the pregnant mother were from a low socioeconomically background with lower level of education and used lesser antenatal health care services. For pregnant women attending the antenatal clinic, extra care should be taken to ensure that pregnant women should have minimum number of regular antenatal visits. By providing proper patient education and care regarding the preterm birth and managing the complications with appropriate treatment in pregnant women will prevent the chance of getting preterm birth. Preterm births require early and prolonged hospitalization posing great financial and psychological burden on the family and the society at large. Our study concluded that preterm birth was highly reported in pregnant women with inadequate knowledge. So health education should be provided during antenatal visits, in prenatal wards and in outpatient visit in the hospital would be beneficial and helpful to reduce neonatal mortality and morbidity. Appropriate and adequate counseling on different antenatal services needs to be offered to prevent preterm birth.

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AUTHORS CONTRIBUTION STATEMENT

Ms. Vanmathi SM and Ms. Monitha Star M conceptualized and gathered the data with regard to this work. Dr. N. Venkateswaramurthy analyzed these data and necessary inputs were given towards the designing of the manuscript. All authors discussed the methodology and the result and contributed to the final manuscript.

CONFLICT OF INTEREST

Conflict of interest declared none.

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