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RETROSPECTIVE STUDY ON MATERNAL & FOETAL OUTCOME AND BIRTH COMPLICATIONS OF TEENAGE PREGNANCY IN A TERTIARY MEDICAL COLLEGE

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ABSTRACT

Introduction: Early childbearing is associated with various health risks for both mother and child. Teenage mothers are more likely to experience pregnancy related complications. Worldwide 11% of all births occur during adolescent age and these complications in pregnancy are the second most leading cause of death among the adolescent girls, aged 15-19, globally. Adolescent fecundity has become the most decisive bio-demographic and health indicator of development, NFHS data and sustainable development goal too. After several years of specific public investments in reducing fertility among teenagers though research, policy, services, and education the expected changes in teenage fertility and reproductive journey are to be linked now with corresponding changes in the

social, cultural, ideological and economic conditions. Hence, the present study aims to find out the incidence and to evaluate the various complications associated with teenage pregnancy in a rural population with high rate of early marriage and teenage fertility.

Materials & methods: Our study was a hospital based retrospective cross- sectional study of maternal, foetal & neonatal outcome & mode of delivery of teenage mothers delivering in a tertiary medical college. Data was retrieved from hospital records. The study population will consist of 500 teenage mothers delivered in DHGMCH over the study period of Nov 2020- Nov 2021 to study labour events, incidence of caesarean section and instrumental delivery with their indications and incidence of postpartum complications and SNCU admission.

Results: In our study 90 % was primigravida as well was 3 teenage mothers had 2 previous child. Among teenage mothers 52 % were Muslim. About 19% mothers had anaemia.39 % teenage mothers delivered by LSCS and 23.2% had preterm delivery.15 % had prolonged labour. In our study population 15 % developed PIH. Among the babies born to teenage mothers 30% were LBW & 28 % needed SNCU admission.

Conclusion: In our study it is evident that too-early childbearing negatively impacts the survival of newborns & adolescent mother. Complications like maternal under-nutrition, PIH, preterm delivery and low birth weight babies is not higher in teenage mothers of our study compared to national data. Cesarean section rate is considerably high along with admission rate of newborn in our neonatal unit but it is consistent to institutional rate of overall patient profile.

Keywords: Adolescent, Adverse maternal and fetal outcomes, Socio-demographic factors, Teenage pregnancy

INTRODUCTION

World Health Organization defines Teenage Pregnancy as “any pregnancy from a girl who is 10-19 years of age”.[1] Often the terms “Teenage pregnancy” and “Adolescent pregnancy” are used as synonyms. According to UNICEF, worldwide every 5th child is born to teenage mother. Worldwide 11% of all births occur during adolescent age. Adolescent fecundity has become the most decisive bio-demographic and health indicator of advancement.[2] Tens of thousands of adolescents die annually due to causes related to pregnancy and childbirth. These are the second most leading cause of death among the adolescent girls, aged 15-19, globally.[3] According to UNFPA [2010], India (20 percentage) and China (16 percentage) together account for more than one-third of the global total.[4] Teenage pregnancy is also a contributor to adverse childhood event, premature death later, next gen teenage mother, bio-psycho-social risks of violence to youth.[5] Both modern trend of high-risk sexual activity associated with unplanned conception among urban and early marriage among rural girls creates hurdle for women to their success ,incomplete education, lost opportunities of jobs, thus poor performance in their economic contribution.[6] It is time for periodic evaluation of several years of dedicated public investments in reducing fertility among teenagers though research, policy, services, and education. The result is inconsistent in different countries where some teens are delaying sexual initiation; many teens are less sexually active; more of those teens who do have sex use contraception effectively; and many of those teen who become pregnant have abortions of baby.[7] Problem in conservative Islamic countries lies where teenage mothers are married and receiving full social, financial and emotional support,even cannot accept contraception and abortion services.[8] However this support cannot protect the teenage mother from the obstetric complications related to young age and incompletely developed mothers either physically or motherhood wise due to insufficient reproductive knowledge. Teenage mothers are more likely to experience pregnancy related complications. Adverse Maternal outcomes of teenage pregnancy includes Preterm labour, anaemia, Hypertensive Disorders of Pregnancy (HDP), Urinary Tract Infection, abortion, Sexually

Transmitted Diseases, HIV, malaria, obstetric fistulas, puerperial sepsis, systemic infection, mental illness and high rate of Caesarean Sections for cephalo-pelvic disproportion and foetal distress. Adverse foetal outcomes include preterm births, Low Birth Weight infants, Still Births, birth asphyxia, Respiratory Distress Syndrome and birth trauma or injury. Extreme poverty and being the son or daughter of and adolescent mother are risk factors of repeating the early pregnancy model, a hurdle towards social advancement These changes are linked to evolution in the social, cultural, ideological and economic conditions of a nation.[6] Hence, the present study aims to find out the incidence and to evaluate the various complications associated with teenage pregnancy. One of the targets of sustainable development goals (SDGs 3.1) is ending preventable maternal deaths which aims for less than 70 maternal deaths per 100,000 live births globally by the year 2030.[9] Preventing teenage pregnancy can help this goal since it is associated with poor maternal and child health outcomes and increased risks of dying during pregnancy. The main reasons reported for such finding was lack of education ,lack of awareness about ill effects of teenage pregnancy,lack of woman empowerment,child marriage customs,poor knowledge of family planning services ,lack of decision making ability,uniform and quality obstetric services practicing gap ,poverty etc [6]

METHODS:

Study design

Cross-sectional hospital based comparative study.

Study setting

The study was conducted in Department of Obstetrics & Gynaecology, Diamond Harbour Government Medical College and Hospital which is an academic tertiary care hospital located in South 24 Parganas, West Bengal, India.

Study period

The study was conducted during the period November 2020 to November 2021

Sample size

A convenient sample of 500 adolescent mothers of age <19 years were taken

Study population

Data were collected from records of case sheets and log book in Antenatal ward, Labour room and Postnatal wards of Department of Obstetrics and Gynaecology in Diamond Harbour Government Medical College and Hospital

Inclusion criteria

Inclusion criteria were mothers who were willing to participate in the study; mothers of age <19yrs

Exclusion criteria

Exclusion criteria were mothers who were not willing to participate in the study; presence of any pre-existing major medical or surgical illness which could affect the pregnancy outcome like congenital heart disease, SLE, renal disease and any acute infectious diseases. Also mothers with previously diagnosed uterine anomaly, uterine surgeries were not included.

Method of data collection

Data was collected to observe the obstetric and foetal outcome and any obstetric complications that occurred during antenatal, intra-natal period from patient's case sheets and hospital records. Data related to laboratory investigations was collected from the participants' respective hospital records.

Ethical approval

Ethical approval was obtained from the Institutional Health Research Ethics Review Committee before the commencement of data collection (Ref.no. IHRERC/106/2020)..

The following definitions were used to record pregnancy outcomes:

Preterm birth-delivery before 37 weeks of gestation;

Prolonged pregnancy- delivery after 42 weeks of gestation;

PIH, preeclampsia-Twice repeated blood pressure measurements exceeding 140/90 mmHg with proteinuria exceeding 0.5 g/day; and

Low birth weight - Birth-weight <2500 g.

IUGR- Infants were considered small for gestational age (IUGR) when the sex- and age-adjusted birth weight was below the tenth percentile according to the normal tables for our population.

The limit for *low haemoglobin* was 10 gram/dl in the third trimester of pregnancy.

RESULTS:

TABLE 1: Socio-demographic and Obstetric Characteristics

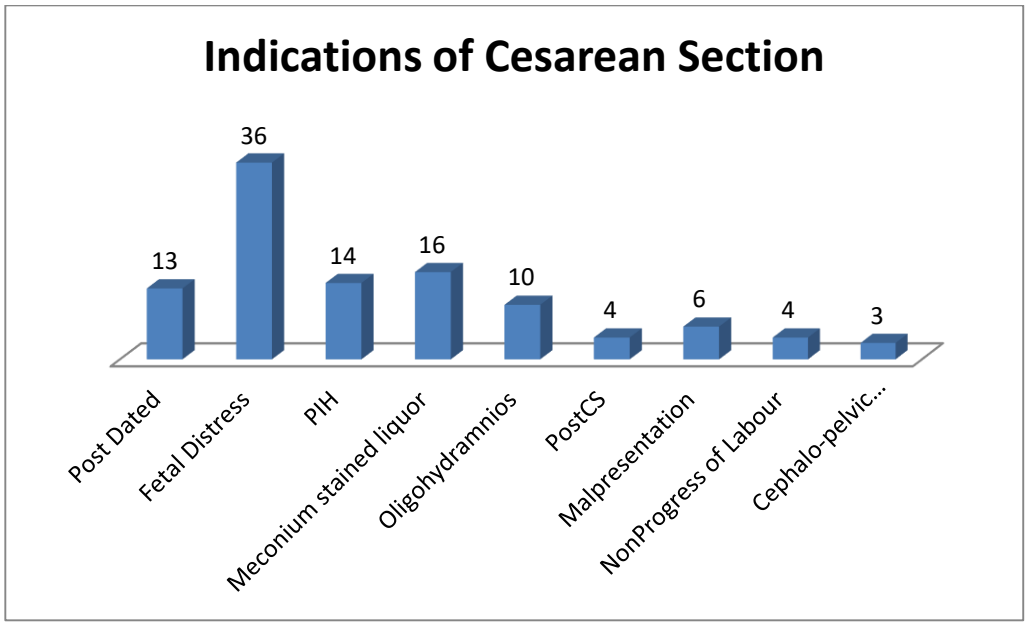
PARITY	P0+0	451	90%
	P0+1	25	5%
	P1+0	20	4%
	P2+0	3	0.6%
RELIGION	HINDU	239	47.89%
	MUSLIM	260	52.10%
PREVALENCE OF ANEMIA	Hb >10gm/dl	397	79.5%
	7-9.9	98	19.6%
	<7	5	1%

TABLE 2: Distribution of study population according to maternal complications & outcome

	Parameter	Number	Percentage	Institution Rate
Mode of Delivery	VD	119	23.8%	
	CS	196	39.2%	47%
	VD, Episiotomy	175	35%	
	Ventouse	1	0.2%	
Period of Gestation at delivery	< 28weeks	1	0.2%	22.3%
	28-32 weeks	9	1.8%	
	33-37 weeks	106	21.2%	75.6%
	38-42 weeks	379	75.9%	
	>42 weeks	4	0.8%	3%
Duration of labour	>6 hours	180	36.07%	
	6-12 hours	242	48.4%	
	12-18 hours	76	15.2%	
	>18 hours	1	0.2%	
Pregnancy induced Hypertension	Normotensive	415	83.16%	
	Mild PIH	71	14.22%	
	Severe PIH	13	2.6%	

Table 3: Distribution of parameters according to foetal outcome

Parameter	Number	Percentage	Institution Rate
LOW BIRTH WEIGHT	151	30.2%	26.53%
IUGR	112	22.4%	
STILLBORN	6	1.2%	3.5%
SNCU Admission	142	28.45%	14.08%



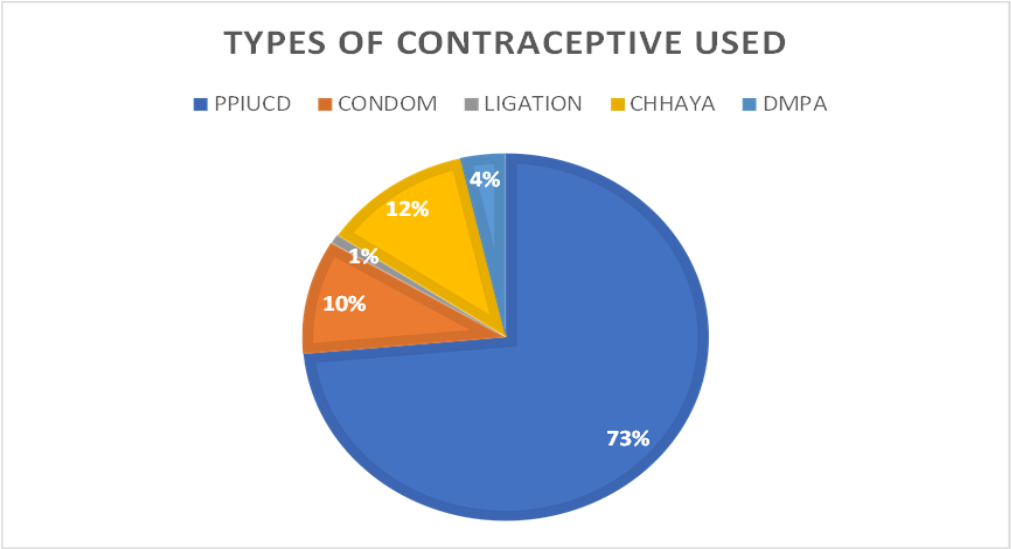


Table 4: Relation between prevalence of anemia and poor perinatal outcome

	Normal outcome	Poor outcome	Chi –square value	P-value
Hb>10	279	118	0.3654	0.545
Hb<10	82	30		

Table 5: Relation between duration of labour with perinatal outcome

	Normal outcome	Poor outcome	Chi-square value	P- value
Normal duration	295	127	0.25	0.61
Prolonged labour	56	21		

DISCUSSION

Teenage pregnancy is high risk for mother, fetus and new born. Teenage mothers when married receive full social, financial and emotional support. In the present study our mothers are all married so they are not very much malnourished and anaemic.

In a study by Radha Kumari Paladugu conducted at Guntur,Andhra Pradesh on adolescent pregnancy 28% moderate anaemic,68% mild anaemia and no severe anaemia whereas in our study

19.6% had moderate anaemia and 1.4% had severe anaemia.[10] This is partly explainable as adolescent fertility rate dropped from 51 to 43% (NFHS 5)[11]. In the same study preterm delivery rate is 30% and low birth weight delivery is 28% whereas,in our study preterm rate is 28.4% and low birth weight below 2500 gm is 30% which is almost in concurrence.[10]

In a study conducted at Riyadh, preeclampsia and high blood pressure was found to be 2% in teenage mothers which is in sharp contrast with this study where high BP and preeclampsia was found in 16.8% of the study population.[11] In this study LBW rate is 30.2%, caesarean section rate is 39.2% and preterm delivery rate is 23.2% in teenage pregnancy.

Study conducted in Indonesia, in 2019 also found a significant higher risk of eclampsia and postpartum haemorrhage in the teenage study population, unlike the studies conducted in Europe. Our study also found 16.8% of the patients to have high BP and preeclampsia. [12] The rate of Cesarean section in the same study was around 29% which is lower than the present study where the rate of Cesarean section is 39%.

In a study conducted in Kolkata the preterm delivery rate was found 27.7% wherein our study it was 28.4%, babies born with low birth weight was 38.9% which was found 30% in this study. In this same study still birth rate was found to be 5.1% which was much higher than this study, which found still birth rate to be 1.2%.[13]

In a study published on 2020 from Hebei province, China a risk of adverse perinatal outcome was associated with teenage pregnancy. However the rate of Casarean Section and Gestational Diabetes Mellitus was found to be lower in teenage pregnancy than others. [14]
This study also did not found any significant relation between poor perinatal outcome with anemia in mother and duration of labour which is not in concurrence with previous studies. Possibly this is partly explainable by poor follow up by the patients after being discharged from hospital.

CONCLUSION:
India is home to one of the world's largest youth population, where 358 million young people less than 24 years comprise 20 % of total population. One –third of married girls are teenage and early conception is common. National family Health Survey (NFHS 4) revealed 9.2% teenage pregnancy rate in rural India and in rural Bengal the rate is as high as 20.6%. In other Asian countries in the predominantly rural population, more than half of girls are married by 18 years and birth to teenage women is 11% of all births. [15] Children of teenage mothers have higher neonatal morbidity, difficulties reaching developmental milestones, and probably do not reach their full potential in life. In addition, adolescent mothers, at times, are less likely to earn more than their peers. The above situation usually leads to un-empowered women who are often at risk of, and unable to defend themselves from, abusive relationships. Poverty and lack of proper education are risk factors for teenage girls and has to succumb to family pressure for marriage and conception. National Government policies and laws regarding minimum age of marriage, school sex education programme, nutritional supplement, and employment generation should be strengthened. Antenatal care should be increased to prevent low birth weight and some preterm delivery. Improved socioeconomic situation and antenatal with intrapartum care can reduce perinatal mortality in teenage mothers.

RECOMMENDATION*:*
Early child bearing has a direct impact on population growth and hence policy makers should be aware of the consequences. Strengthening of women empowerment programs, more male participation in contraception, provision of proper sex education at school level, increasing availability of contraception – all have a role to play. Stringent law enforcement regarding under age

marriage is also the need of the hour. Nutritional supplementation programs and multi-sectorial coordination is recommended.
Special attention should be given to the under sixteen pregnant mothers admitted in hospital and a multidisciplinary approach in the hospital will render more positive outcome.

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Conflict of interest: None

Ethical approval: The study was approved by the Institutional Ethics Committee

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