



A STUDY OF MATERNAL AND FETAL OUTCOME OF TEENAGE PREGNANCY IN A TERTIARY CARE HOSPITAL

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ABSTRACT **Aims:** To study the outcome of teenage pregnancy and to evaluate the obstetric and perinatal complications associated with teenage pregnancy. **Material And Methods:** It's a prospective study done in Victoria government hospital for mother and child care Visakhapatnam. Study population include all pregnant women aged between 13-19 years. Sample size 100 teenage women and duration 12 months from September 2022 to August 2023. **Results:** The Present study on fetomaternal outcome in teenage pregnancy in 100 randomly selected cases for a period of one year is as follows :On analyzing the age of menarche , socio economic status , educational status , age at marriage, early age at marriage was found to be the most prominent determinant of teenage pregnancy. The average age at marriage was 17.5yrs which is lower than legal age of marriage (21 years) About 25% of them are illiterate, and 40% had primary level of education. Majority of them belong to low socioeconomic status. In the present study 78% were booked in teenagers 22% un booked. It is concluded that complications like anemia, preeclampsia , CPD, malpresentations, preterm labour ,low birth weight are higher in teenage pregnancy. They have no knowledge about post coital contraception. The incidence of abortions in study group there were 2 cases of induced abortions at second trimester in the study group. To concluded that though the incidence of teenage pregnancy is showing a declining trend in the recent times it should still be reduced when compared to the developed countries. Early age at marriage is on of the important determinant of teenage pregnancy in our society .There is increased incidence of complications like anemia, preeclampsia, preterm labour, low birth weight. Hence adolescent pregnancy should be discouraged by increasing the age at marriage for girls. Illiteracy and poverty has to be combated for the betterment of women.

KEYWORDS : Teenage pregnancy, Adolescent age, maternal fetal complications

INTRODUCTION

Teenage Pregnancy is defined as an under-aged girl becoming pregnant. The definition of "teenage" according to Oxford Dictionary is a girl's age between 13-19 years. Teenage pregnancy is considered a high risk. And also a socio-cultural problem. Early marriage is a long-established custom followed in India.

The Sarada Act (1921) force in order to forbid the practice of childhood marriage. In spite of these, child marriage is still prevalent in certain states like Rajasthan, Madhya Pradesh and Uttar Pradesh, where a large number of girls get married around 15 years of age. Prior to 1951, the average age at marriage in India was 13 years. The Child Marriage Restraint Act (1978) revised the legal age of marriage from 15 to 18 years for girls and 21 years for boys.

The factors contributing for teenage pregnancy are lack of knowledge on sexual education, ineffective utilization of modern contraceptives, cultural obedience, Socioeconomic dependence of females on males, peer influence, lack of information about the importance of avoiding pregnancy during the teenage, exposure to wrong messages, inquisitiveness about sex leads to premarital sex increased risk of pregnancy, out-of-wedlock births and abortions.

Factors like age at menarche, literacy, socio- economic conditions, cultural factors and trends in society affect the age at marriage. Many of the teenagers who delivered the first child at 14 or 15 years became mothers of 2 or 3 children by the age of 20 years

In order to understand the problem of teenage pregnancy, it is important to understand the determinants of early marriage. The growth and development of adolescents, nutritional needs of teenagers. Adolescent child-bearing initiates a Syndrome of Failure ie failure to complete one's education, failure to limit family size, failure to become independent.

Review Of Literature

About 11 percent of the world's teenage pregnancies happen in India. This accounts for 16 million women between the ages of 15-19 years. According to the National Family Health Survey 4 (NFHS 4), 7.9% of women between 15-19 years, were pregnant at the time of the survey in 2017, with higher prevalence in rural areas (9.2%) compared to urban areas (5%).

Teenage pregnancy is associated with maternal complications like

preterm birth, low birth weight, perinatal mortality, increased infant mortality and poor growth of children. A woman in a developing country has a 1 in 65 risk of dying during pregnancy or child birth in her lifetime, which is 33 times higher in developed countries. Fertility refers to the ability of a couple to beget children. As child bearing generally follows after marriage in our country, age at marriage is in turn related with fertility.

Literacy: According to NGO Child Rights and You (CRY) the higher the literacy and schooling among women and better the quality of education, the lower the cases of child marriages. Also there is a direct correlation between increased literacy and decreased fertility. In Kerala, female literacy is the highest (65%), with 3.4 children/women, it has one of the lowest fertility rates. In contrast Rajasthan has lowest literacy rate 11% (the lowest of the 14 states studied) and highest fertility rate 6.0 children/woman

Socio economic and cultural factors: Poverty is associated with an increase in teenage pregnancy rate (Besharov et al., 1997). Poverty is associated with lack of education and an attitude of irresponsibility with respect to marriage. Qureshi (1981) observed that women with low socio-economic status married earlier than those with higher socioeconomic status. The cultural taboos and traditions in certain areas of the society also influences the age at marriage. Joint family system encourages early marriage and more children. A girl is also more likely to become a teenage mother if her mother or her sibling gave birth in her early age (East PL, 2001).

Unwed pregnancy: Worldwide, the age at menarche has come down, while the age at marriage is increasing. Reasons for increasing unwed pregnancies in recent times are rapid urbanization, lack of respect towards ones traditions and culture, peer pressure, premarital sex with lack of knowledge about contraceptives child abuse and violence, social stigma. Researchers estimate that one third of teenage pregnancies could be prevented by eliminating these exposures.

Adolescence and growth: It is during this period that the completion of physical growth and sexual maturation occurs. A teenager gains about 25 percent of the adult height and 50 percent of the adult weight during puberty. The growth spurt in females occurred between 9.5-14.5 years.

Nutritional needs of teenagers : Adolescence is a vital period during which lifetime habits are established as stated by Cavadini et al in 2000. These habits have the potential to enhance or undermine health

throughout life. Factors that impact mothers nutritional status are social and economic environment of adolescent pregnancy, gynecological immaturity, competition for nutrients, and the growth of the mother as suggested by King (2003). In a recent systematic review by Hall Moron in 2007, he stated that the nutrient intake of pregnant adolescents has been found to be low in a number of nutrients especially iron, calcium, folate, vitamin E and magnesium iron, calcium which are used for fetal growth and development during pregnancy. Also poor maternal nutritional status has been associated with short- and long-term health implications for both mother and child. These include pregnancy and birth complications, poor postpartum malnutrition, lactational failure, increased maternal mortality, fetal growth restriction, increased preterm births, spontaneous abortion, congenital abnormalities, and morbidity and mortality in the infant as stated in IOM 1990. For example, high fat intake during adolescence is associated with an increased risk of heart disease, and low calcium intake is associated with low bone density and an increased risk of osteoporosis in later life (Lytle 2002). Adequate nutrition in adolescent pregnancy therefore presents many challenges for health professionals and policymakers alike. Complications of teenage pregnancy: Pregnancy in adolescence is considered high risk because of the additional burden by reproduction on a body which is still growing. These include an increased risk of sexual transmitted disease, preterm labor, low birth weight, labor and delivery complications (preeclampsia, eclampsia, labor dystocia, obstetrical hemorrhage) and a higher rate of perinatal mortality. The socio-economic consequences of teenage pregnancy include more unwanted pregnancies and out-of-wedlock children, greater marital instability, poor education, and lower income later in life.

Prenatal care: Pregnant teens are less likely to receive prenatal care, often seeking it in the third trimester (Jin young Nam et al). The reasons for this include: failure to recognize pregnancy, ignorance and casual attitude towards need of care, noncompliance and inappropriate methods of service and delivery, social and economic barriers, leading to complications like eclampsia, anemia, increased risk of urinary tract infections. Yonsei university reports that about one-third of pregnant teens receive insufficient prenatal care and that their children are more likely to suffer from health issues in childhood or hospitalized than those born to older women. They identified adequacy of prenatal care according to the Kessner Adequacy of Prenatal Care Index (KAPCI). To meet an adequacy of the KAPCI rating, a woman must begin prenatal care in the first trimester and have nine prenatal care visits. Inadequacy of the KAPCI rating was defined by a late start of prenatal visit during the third trimester, with four or less prenatal care visits until 34 weeks 7 days of pregnancy, while others were defined as intermediate KAPCI.

Hypertensive disorders of pregnancy: Extremes of age (higher in teenage) is a risk factor for pre-eclampsia. Pre-eclampsia is greatest in women younger than 20 years of age. Pre-eclampsia and eclampsia was observed to be essentially connected with adolescent mothers (Sheela et al 2019). Higher incidence of preeclampsia was observed in nulliparous teenagers when compared to adults (usta et al). Higher incidence of preeclampsia, preeclamptic toxemia, eclampsia was seen in teenagers (Tej singh et al 2007). Incidence of gestational hypertension is higher in adolescent mothers compared to women of >20 years (Pradhan et al 2012). Teenage mothers were twice highly at risk of developing hypertension in pregnancy (s madhu et al 2009).

Anemia: Anemia during delivery was significantly associated with teenage pregnancy. A number of studies showed teenage pregnancy was significantly associated with anemia. Ehrenthal et al. found that women < 20 years age had 1.3 times higher risk of peripartum transfusion, compared to women aged 20–34 years.

Teenage and pelvic factor: Teenage mothers are physically under developed. Though parents think that their girl mature at menarche, a young women's pelvis still takes more time to grow, therefore pregnancy and birth at a young age results in serious risks for both mother and child. The pelvic bones takes more time to grow after cessation of growth of height. An adolescent's pelvis may not be completely developed and this can lead to poor fetal growth resulting in lower birth weight in adolescent mothers (lidia et al 2013). Due to immaturity of their pelvis, adolescent pregnancy is associated with increased risk of longer labor and cesarean delivery as indicated for failure to progress or descent.⁷

Mode of labour and delivery: It has been suggested that due to

immaturity of their pelvis, adolescent pregnancy is associated with increased risk of longer labor and cesarean delivery as indicated by failure to progress or descent. However, many recent studies have stated that adolescent mothers were more likely to have vaginal delivery (Shaikh SAH et al 2012). Incidence of vaginal delivery among teenagers was higher than that in adults (Abdulrahman et al 2015). In a study done by Haritha sagili et al many had normal vaginal deliveries than caesarean. In a study done by Selvendran Rangaiah et al in 2004 the rate of normal vaginal delivery was 75.5% and c section was 45.8%. The most common indication for caesarean section was cephalon pelvic disproportion, obstructed labor, abnormal presentation. Incidence of instrumental delivery, perineal tears, PPH >1000 ml is also less in teenagers.

Perinatal outcome: Most studies from developed and developing countries have consistently reported that teenage pregnancy is at increased risk for preterm delivery and low birth weight.

Risk factors such as BMI, employment, previous abortions, previous preterm births, and previous caesarean section contributed to higher incidence of preterm births (Junitha indarathi et al 2020). The percentages of preterm birth, and LBW were significantly higher among teenagers than those among AMA women. In a study done by Pergialiotis et al. and Tamima et al 2014 there was a higher incidence of very low birth weight < 1.5 kgs in teenagers (3%) compared to non teenagers (0.3%). Higher incidence of preterm delivery (18.6% vs 10.8%), low birth weight (39.1% vs 24.2%), very low birth weight babies (13.7% vs 8.7%) were found in teenage pregnancies compared to pregnant of AMA (Arpitha shruthi et al 2019). The neonates born to teenage mothers were at risk of developing complications like low birth weight (44%), prematurity (14%), Preterm labour (14%), IUGR (25.4%), hypoglycemia (30%), hyperbilirubinemia (67%), and increased neonatal intensive care unit admissions (37%) in comparison to those born to adult mothers. (Rini R Naik 2021).

Congenital abnormalities: The pregnant adolescent is slightly at a greater risk of having a baby with birth defect than woman aged 20–30 years. The reasons for the observed anomalies in early pregnancy are unclear. Some risk factors such consanguineous marriage, pre pregnancy BMI, folic acid and other multivitamin intake before and during pregnancy, as well as social factors such as lack of support, isolation from peers and/or family, financial pressures, social attitudes, etc. Teenage pregnancy (13–19 years old) was associated with increased risk of central nervous system anomalies like anencephaly, spina bifida, meningocele, gastrointestinal anomalies like omphalocele/gastroschisis and musculoskeletal / integumental anomalies like cleft lip, cleft palate and polydactyly, syndactyly, adactyly. (Marc C Walker et al 2007).

Abortions in teenage pregnancy: A significant number of teenage pregnancy ends in abortions either spontaneous or induced. In all parts of the world, particularly in urban areas, an increasing number of all those having abortion are unmarried adolescents. The unmarried teenagers usually report late for termination (around 10 weeks) and if they go to untrained doctors, the consequences can be disastrous. 30% of all Indian induced abortions are performed on women who are under 20. Globally, 56 million abortions take place every year. In South and Central Asia, an estimated 16 million abortions took place between 2010 and 2014, while 13 million abortions occurred in Eastern Asia alone. Based on 2019 data provided by WHO, 55% of unintended pregnancies among adolescent girls aged 15–19 years end in abortions, which are often unsafe. New Delhi conducted a study in India to estimate the incidence of abortion.

Impact on mother: A teenage pregnancy can change the life of a young mom. It puts her in a place where she's responsible not only for herself, but also for her baby. While not all teenage mothers are affected greatly by mental and physical changes, many are. A research study published in the journal Pediatrics studied more than 6,000 Canadian women, ranging in age from adolescents to adults. Their study showed that teenage mothers are more prone to depression than women of AMA.

Impact on child: Children born to adolescent parents face greater challenges throughout their lives. According to YOUTH.GOV effects of a child born to teenage mother include greater risk for lower birth weight and infant mortality, less prepared to enter kindergarten, Rely more heavily on publicly funded health care, More likely to be incarcerated at some time during adolescence, More likely to drop out of high school, More likely to be unemployed or underemployed as a

young adult.

Aims and objectives

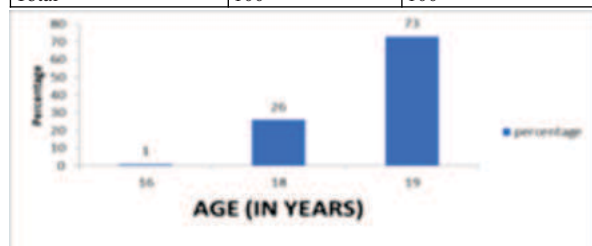
To study the outcome of teenage pregnancy and to evaluate the obstetric and perinatal complications associated with teenage pregnancy

Material And Methods: Study design: it's a prospective study in Victoria government hospital for mother and child care Visakhapatnam. Study population and setting: all pregnant women aged between 13-19 years are considered as study population. Sample size: 100 teenage women and duration 12 months from September 2022 to August 2023.

Methodology: it is prospective and comparative study in Victoria government hospital for mother and child care at Visakhapatnam. Inclusion criteria: pregnant women between 13-19 yrs were taken as study group

RESULTS

Parity	Number	%
Primigravida	96	96
Gravida-II	3	3
Gravida-III	1	1
Total	100	100



96% of teenage pregnancies in the study group are primigravida.

Table-2: Educational Status

Education	Study group (%)
Illiterate	25
primary education	40
secondary education	22
+ 2 and graduation	13
Total	100

In the study group 25% of the women are illiterates and 40% women completed their primary education, 22% completed secondary education and 13% completed plus 2 and graduation. And 3/4ths of women in study group belong to lower SES.

Table-3: Socio Economic Status

Socio economic status	Teenage %
upper	0
upper middle	0
lower middle	6
upper lower	21
lower	73

In this study group only 19% of teenage pregnancies delivered before term gestation and 8% delivered after full term

Table-4: Categorization Of Gestational Age

Age group	Preterm	Term	Post term
Teenage	19	73	8

In my study complications like anemia in 17%, preeclampsia in 15%, eclampsia in 1%, GHTN in 19%, Preterm labor in 14%, IUD in 1%, Malpresentations in 8%, APH in 2% are seen

Table-5: Maternal Complications

s.no	Complications		p-value
1	Anemia	17 (17%)	0.001
2	Gestational hypertension	19 (19%)	0.00
3	PROM	19 (19%)	0.04
4	Preeclampsia	15 (15%)	0.000
5	Preterm labor	14 (14%)	0.268
6	Malpresentations	8 (8%)	0.194
7	Abortions	2 (2%)	0.497

8	Abrupton	2 (2%)	0.155
9	Intrauterine death	1 (1%)	1.0
10	Eclampsia	1 (1%)	0.04

Table-6: Distribution Of Presentation

Age group	Cephalic	Breech	Transverse
Teenage	92	7	1

The common presentation in the study is cephalic presentation only 7% in breech presentation and 1% in transverse presentation

The following table shows Cephalopelvic disproportion is most common indication for CS

Table-7: Indication For Caesarean Delivery

Indication	Teenage
Cephalopelvic disproportion	23
Fetal Distress	6
Malpresentations	8
Post C section	0

In the present study 63% of women delivered normally

Table - 8: Mode Of Delivery

Mode of delivery	n	%	
Vaginal delivery	63	63	0.19
Caesarean section	37	37	0.059
Total	100	100	

Coming to the fetal outcome 71% of the babies born with teenage mothers are between 2.5 to 3.5 kgs, 21% are between 1.5 to 2.5 kgs and less than 1.5 kg and more than 3.5 kgs are in 3% of the babies each. And 92% of the babies born with APGAR more than 7, only 7% born with APGAR less than 7.

Table-14: Birth Weight Of Infants

Weight (in kg)	Study Group	
	Numbers	%
<1.5 kgs	3	3
1.5 -2.5 kgs	21	21
2.5-3.5 kgs	71	71
>3.5kgs	3	3
Total	98	98

Table-15: APGAR Score

APGAR SCORE	Study group (%)	P value
<7	7	0.085
>7	92	

Neonatal outcome is uneventful in 85% of the babies and 14% required NICU admissions

Table-18: Neonatal Outcome

Outcome	Study Group	
	Numbers	Percentage
Uneventful	85	85
Perinatal mortality	0	0
NICU admissions	14	14
Total	99	99

DISCUSSION

In the present study 78% of all teenage pregnancies are booked. About 73% belong to low socio economic status. The complications like anemia, preeclampsia, gestational hypertension, preterm labor, CPD, malpresentations, preterm labor are more common

Nutritional anemia in adolescent pregnant women is high in our country. iron deficiency is the commonest cause. In the present study the incidence of anemia is 17% in teenagers and 3% in non teenagers. Since p value is < 0.001 it is statistically significant. The causes of anemia are increased demands, poor nutritional status, worm infestations, illiteracy and ignorance to choose the right type of nutritious diet and neglect to take the daily diet of iron and multivitamin tablets.

The incidence of anemia as reported by various authors are 58% Rahmat et al 2014, 26.3% Rini N Naik et al 2021. Merchetti and Manekar were the first to note preeclampsia as the most important complication of teenage pregnancy and felt that younger the patient greater the incidence of preeclampsia.

In the present study the incidence of preeclampsia is 15%, gestational

hypertension is 19%, eclampsia is 1% where as it is 2%,2%,0% in non-teenagers. The incidence in other studies is as follows:PIH 11.3% Girma et al (2020), risk pf preeclampsia 28.6% as per Rini N Naik et al (2021),6.4% Ashitha Agarwal et al (2021),12.8% Arpitha shruthi et al (2019).The incidence in other studies is as follows : PIH 11.3% Girma et al (2020), risk pf preeclampsia 28.6% as per Rini N Naik et al (2021),6.4% Ashitha Agarwal et al (2021),12.8% Arpitha shruthi et al (2019)¹³.

The incidence of fetal growth restriction in the present study is 6% in teenagers and 0 in non-teenagers.

Other studies show an incidence of 16.3% Nyirati et al (1999),36% eshrat(2021).

The incidence of APH in the present study is 2% in teenagers and 1% in non-teenagers and it is due to abruption placenta.The incidence of preterm labor in other studies are as follows 7% by rahmat et al (2014),14% Rini N Naik et al (2020), 12% Ashitha Agarwal et al (2021), 18.6%Arpitha shruthi et al (2019)¹³.

The incidence of cephalo-pelvic disproportion in the present study is 8% in teenage pregnant wome and 3% in non-teenagers. Kesava Chandra et al 2022 reported an incidence of 19%, Priya et al 2016 14.5% 5, Gazala Yasmin et al 7.04%.

The incidence of cephalic presentation is 92% in teenagers and 96% in non-teenagers (vertex is the commonest) followed by breech. The incidence of breech is 7% in teenagers and 3% in non-teenagers.

This high incidence is probably due to prematurity and small pelvic dimensions. The incidence of vaginal delivery was 63% and 76% in teenagers and non-teenagers.

The incidence of caesarean section in high in teenagers that is 37% compared to 24% in non-teenagers. The incidence of c section as per other authors 12.9% girma et al (2020), 21% Rini N Naik et al (2021)⁹, 25.7% Arpitha Sruthi et al (2019)¹³.

The indications for c section are cephalon pelvic disproportion followed by fetal distress, severe oligo-hydromnios, malpresentations and failed induction. The indication for caesarean section in average maternal age women are severe oligo, failed induction, fetal distress , malpresentations and post caesarean section.

In my study the incidence of low birth weight is 21% compared to non-teenagers 6%.

The incidence of low birth weight as per other authors is 17.5% Girma et al (2020), Rini N Naik et al (2021)⁹, 39.1% Arpitha Sruthi et al (2019)¹³.

Summary

The Present study on feto-maternal outcome in teenage pregnancy in 100 randomly selected cases for a period of one year is as follows:

On analyzing the age of menarche, socio economic status, educational status, age at marriage, early age at marriage was found to be the most prominent determinant of teenage pregnancy. The average age at marriage was 17.5yrs which is lower than legal age of marriage (21 years).

About 25% of them are illiterate, and 40% had primary level of education. Majority of them belong to low socioeconomic status according to modified Kuppuswamy scale.

In the present study 78% were booked in teenagers 22% un booked whereas 74% were booked and 26% un booked in control group. It is concluded that complications like anemia, preeclampsia ,CPD, malpresentations, preterm labor ,low birth weight are higher in teenage pregnancy.

They have no knowledge about post coital contraception.

Also awareness about HIV was found to be nil in more than half of the teenagers

Comparing the incidence of abortions in control and study group there were 2 cases of induced abortions at second trimester in the study

group but none in the control group.

CONCLUSION

It may be concluded that though the incidence of teenage pregnancy is showing a declining trend in the recent times it should still be reduced when compared to the developed countries. Early age at marriage is on of the important determinant of teenage pregnancy in our society.

There is increased incidence of complications like anemia, preeclampsia, preterm labor, low birth weight. Hence adolescent pregnancy should be discouraged by increasing the age at marriage for girls.

Illiteracy and poverty have to be combated for the betterment of women.

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