

ADOLESCENT PREGNANCY- CHILDREN HAVING CHILDREN

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INTRODUCTION

'Adolescence' or 'Teenage' is the transition from childhood to adulthood. The word 'adolescence' is derived from a Latin word 'adolescere', which means 'to grow up'. It is defined by the World Health Organisation (WHO) as period between 10-19 years of age. Adolescence represents a key stage in development and a critical opportunity for ensuring successful transition to adulthood. A child in this time grows in structural, functional and psychological aspects.¹

In recent decades adolescent pregnancy has become an important health issue in a great number of countries, both developed and developing. However, pregnancy in adolescence is by no means a new phenomenon. Most teenage marriages lead to the teenage motherhood. Once the matrimony is over during teenage, it hardly ever leaves any liberty for a planned maternity, mainly in a patriarchal kind of society. In this state, the fertility choice of the married woman or the expression of her background quality barely gets chance to be manifested after fleeting through a series of 'Hierarchical Social Structures' viz., society, community, family, husband; and the immediate motherhood is hardly designed by herself.

The latest international estimates indicate that worldwide more than 60 million women aged 20–24 years were married before the age of 18 years and about 16 million women 15–19 years old give birth each year, representing 11.0% of all births worldwide. Ironically, half of all adolescent births occur in just seven countries: Bangladesh, Brazil, the Democratic Republic of the Congo, Ethiopia, India, Nigeria and the United States.²

Adolescent pregnancy is on the rise, emerging as a serious problem all over the world and more so in developing countries like India where early

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marriages and early pregnancies are long established and well accepted customs.³

This is more pronounced in states of Bihar, Uttar Pradesh and West Bengal. In India, 16.0% of adolescent girls had started the process of childbearing and that in Karnataka were 18.0%, suggesting that adolescent fertility is quite high in India.⁴

Motherhood primarily requires a suitable and healthy physiological environment, all other external factors being supplementary. At the teen age of a woman, this environment is not assured, leading to the highest probability of hazardous circumstances both medical and social, to the foetus as well as mother. Adolescent pregnancy besides being a major determinant of large family size and rapid growth of population, fertility among adolescents may have significant social, economic and health consequences.⁵ Pregnancy in young women is a high risk event as she herself has not attained her full growth potential and is immature for reproduction. Extrinsic factors like illiteracy, poor socio economic status and inadequate antenatal care also affect the outcome of pregnancy.⁶

Adolescent pregnancy is dangerous for the mother, child and the community. Although adolescents aged 10-19 years account for 11.0% of all births worldwide, they account for 23.0% of the overall burden of disease (disability- adjusted life years) due to pregnancy and childbirth. Fourteen percent of all unsafe abortions in low and middle-income countries are among women aged 15–19 years.² Medical complications such as pre term labour, pregnancy induced hypertension, anaemia and low birth weight babies are strongly associated with adolescent pregnancy. Teenage girls are twice as likely to die of pregnancy and childbirth related complications as opposed to older women. It is also found that children born to adolescent mothers are at higher risk of infant and child mortality. Stillbirths and death in the first week of life are 50.0% higher among babies born to mothers younger than 20 years than among babies born to mothers 20–29 years old. Deaths during the first month of life are 50.0% – 100.0% more frequent if the mother is an adolescent versus older, and the younger the mother, the higher the risk. The rates of preterm birth and asphyxia are higher among the children of adolescents, all of which increase the chance of death and of future health problems for the baby.⁷

The social consequences of pregnancy in adolescence, particularly for unmarried girls, can be severe. School dropout and subsequent lower educational attainment not only hold back personal development but also reduce women's lifetime earnings and hence their contribution to economic growth. Within the framework of teenage marriage and motherhood, women's exposure to several rigid social customs and beliefs can influence the fate of their pregnancy outcomes and health of their children. These factors added with women's lower level of education and awareness and limited access to the household resources and health services can have heightened negative impact on their pregnancy outcomes and health of their children. The biological inconsistency of the teenage motherhood may lead to pregnancy wastages. Various studies have shown that delaying adolescent births could significantly lower population growth rates, potentially generating broad economic and social benefits, in addition to improving the health of adolescents.²

Hence, adolescent pregnancy is not just a health issue; it is a development issue as well. It is rooted in poverty, gender inequality, child marriage and lack of education. It often means an abrupt end to childhood, curtailed education and lost opportunities to an economic and socially productive life.

While there is growing recognition of the need for action to promote adolescent reproductive health, work done in this regard is often piecemeal. In view of the negative socio-economic, demographic and health consequences of early pregnancy, it is important to have a clear understanding of this vulnerable group of adolescent girls.

In this background, as no study about early pregnancy was done in this area, a study to know the complications, outcomes and socio demographic factors associated with adolescent pregnancy was taken up. The inferences obtained from this study can be further used to curb the occurrences of adolescent pregnancies and thereby protect the health of the women and in turn that of the country.

REVIEW OF LITERATURE

ADOLESCENCE: A CRITICAL PHASE

Adolescence is crossroads in development for life. Caught in the web of transition from childhood to adulthood, the adolescents are most acutely affected by various unprecedented and unmanageable changes. It is a difficult period for the young. It is the time of major physical changes like growth spurt, wherein the size and shape of the body change markedly and of puberty, when reproductive capacity is established. It is the time of mental and psychological changes, putting great pressure on themselves and those around.⁸

Adolescents are distinct from children or adults. Although all of them pass through a transition phase, their experiences are diverse as they constitute a heterogeneous group. The familial environments in which teenagers grow also have a tremendous impact on them and their diverse needs. It is a phase of life that is woven within social and cultural dimensions and hence is perceived differently by diverse cultures. While often the world expands for boys thereby giving them greater autonomy, mobility, opportunity and power, for many girls it contracts as they are systematically deprived of these advantages.⁹

Today, one fifth of the world population is of adolescents with four fifth of them in developing countries. When young people strive to fulfill their physical, intellectual, emotional, spiritual, social and artistic potential, they contribute a great deal to the societal progress.¹⁰ The state of their health is important for their lives now and in the future; for this generation and the generations coming next.

CHILD MARRIAGE: A VIOLATION OF HUMAN RIGHTS

Reaching puberty should mark the beginning of a gradual changeover to a healthy and productive adulthood. Instead, for many girls, puberty

marks an accelerating trajectory into inequality. Child marriage is a primary source of this, curtailing a critical period for growth, learning, identity formation and experimentation; each of which is essential if maturation into fully rounded human beings is to be unhindered. Even with the appropriate laws against child marriage in place, the practice persists for a variety of complex, interrelated reasons and poverty often underlies wedding. Some parents genuinely believe that the matrimony will secure their daughters' future, while others see their daughters as a burden or even a commodity. Marriage is often seen as a safeguard against premarital sex, and the duty to protect the girl from sexual harassment and violence is transferred from father to husband.¹¹

Early marriage marks a turning point in the life of a large proportion of adolescent girls in India having far reaching educational, health, social and economic consequences. Early marriage often results in holding back adolescent girls' opportunities for education and skill formation. It also impedes proper physical and mental development before taking on the load of reproduction, resulting in greater reproductive health risks.¹²

The third National Family Health Survey (2005-06) of India reveals that while age at marriage for girls is increasing in India, early marriage continues to be widely prevalent. According to the survey, more than 47.0% of girls were already married by 18 years. Trends indicated that the percentage of women who get married before the legal minimum age at marriage of 18 years has been decreasing over time and that from 1992 to 2006 the percentage of women married by 18 years of age has only reduced from 54.0% to 47.0%. More than half of the women aged 18-29 years get married by the age of 18 years in the states of Bihar (64.0%), Jharkhand (60.0%), Rajasthan (58.0%), Andhra Pradesh (56.0%), West Bengal (53.0%), Madhya Pradesh (53.0%), Uttar Pradesh (52.0%) and Chhattisgarh (51.0%).¹³

Married girls are often under pressure to become pregnant soon after marriage, although they are still kids themselves and know little about sex or reproduction. It directly threatens health and wellbeing. Complications of pregnancy and childbirth together are the main cause of death among adolescent girls aged 15-19 years in developing countries like India.

ADOLESCENT PREGNANCY: CHILDREN HAVING CHILDREN

About 16 million adolescent girls between 15-19 years of age give birth each year. Babies born to adolescent mothers account for roughly 11.0% of all births worldwide, with 95.0% occurring in developing countries. In some societies girls marry and start their families before their own childhoods have ended and in other countries the majority of births to young mothers occur outside marriage where there is a high rate of sexual activity amongst adolescents, some of it coerced, or linked to poverty and social exclusion. However, most childbearing amongst adolescents is in the context of marriage or other forms of union and the highest birth rates to under 19-year-olds are in countries with a high rate of child marriage, a scenario often encountered in developing countries.¹⁴

In developed countries, girls become pregnant due to early sexual debut as a part of risk taking and experimental nature of adolescents. Exposure to alcohol and drugs might lead them into sexual activity resulting in an unintended pregnancy. Declining age at menarche and increased schooling and thereby delaying the age of marriage have prolonged the period of adolescence. Together with a growing independence from parents and families, this has led in recent decades to more premarital sexual relations and increasing numbers of adolescent pregnancies. Lack of knowledge about sex and family planning and the lack of skills to put that knowledge into practice pose teenagers at risk for pregnancy. Rates of use of contraception by adolescents are also often low.¹⁵

In India, although the legal age at marriage is 18 for females and 21 for males, early marriage continues to be the norm. Most reproduction occurs within marriage and so the low age at marriage automatically links to early onset of sexual activity, and thereby fertility. Overall 12.0% of women aged 15-19 years have become mothers and 4.0% in the same age group are pregnant with their first child. This indicates that one in six women in this age group have begun childbearing. Among married adolescents a much higher percentage of adolescents are mothers (44.0%) or have already begun childbearing (58.0%). Although the knowledge of one or the other type of contraceptive method was about 99.0% among adolescents, only 23.0% of the married and 18.0% of the unmarried teenagers had ever used contraception.¹³

Hence, globally, either in developing or developed countries, the key determinants of adolescent pregnancy include early marriage, sexual coercion and lack of access to and use of contraception.

Causes of Teen Pregnancies:

Teen pregnancies may result from different reasons in industrialised countries as compared to developing countries. Factors that contribute to teenage pregnancies include: customs and traditions that lead to early marriage as in developing countries, alcohol and drug influenced adolescent sexual behaviour, peer pressure to engage in sexual activity, lack of education and information about reproductive sexual health and limited access to tools that prevent pregnancies, sexual abuse, violence and family strife at home and low educational ambitions and goals among others.¹⁶

CONSEQUENCES OF ADOLESCENT PREGNANCY: THE DARK FUTURE

Health risks for mother and baby are strongly associated with childbirth at an early age. Although births among adolescents account for 11.0% of all births worldwide, they account for 23.0% of the overall burden of disease (in terms of disability adjusted life years) due to pregnancy and childbirth among women of all ages. In low and middle income countries, complications of pregnancy and childbirth are the leading cause of death in women aged 15–19 years. The social consequences of pregnancy in adolescence, particularly for unmarried girls, can be severe. School dropout and subsequent lower educational attainment not only hold back personal development but reduce women's lifetime earnings and hence their contribution to economic growth. Pregnancies in unmarried girls sometimes provoke violence. Although reliable data on the scale of the problem are not available, pregnancy is increasingly recognized as a reason for suicide among pregnant girls. Similarly, pregnancy among unmarried girls in some cultures is reported as a ground for homicide, on the basis of maintaining family honour.¹⁷

Complications in pregnancy and delivery:^{2,14,15}

Some complications of pregnancy may occur more frequently and more severely in adolescents than in older women viz. anaemia, hypertension, malaria, HIV, operative interventions, prolonged and obstructed labour.

Outcomes of adolescent pregnancy:^{2,14,15}

Adolescents are more likely to give birth to preterm and low birth weight babies, who are at higher risk of neonatal and perinatal mortality. Amongst teenagers, abortion and death during childbirth in many countries is twice as high as for older women. This is due to a range of factors, including primiparity, pregnancy related complications, poverty, low social status and lack of access to health services.

A descriptive cross sectional study was done in Kathmandu, Nepal to know the outcomes of adolescent pregnancy. The study compared the outcomes of 168 mothers of age 15-19 with that of 401 of 20-24 years and showed that the relative risk of low birth weight babies among adolescents was 1.1 times higher than the young mothers and also that neonatal (17.2% vs. 16.7%) and maternal complications like post partum haemorrhage (0.6% vs. 0.2%) was higher among adolescents.¹⁸

A large population based retrospective cohort study conducted in Canada showed that the adverse outcomes of pregnancy like low birth weight, pre term delivery and neonatal death were present in 8.3%, 12.4% and 0.5% participants respectively and it consistently increased with decreasing maternal age and were always highest among infants born to younger mothers¹⁹

Yet another retrospective cohort study done at Scotland showed that among first births, emergency caesarean section was more likely among teenage mothers which were seen in 8.6% of them. Second births in women aged 15-19 had complications like prematurity in 4.7%, stillbirth in 0.7% and emergency caesarean section in 4.2% mothers.²⁰

A study conducted in USA concluded that, the post neonatal mortality rate for infants born to younger mothers was substantially higher (3.2 per 1000) than that of infants born to mothers 23-29 years old (0.8 per 1000). Infants born to adolescent mothers between 16-17 years had near three-fold higher risk of post neonatal death compared to older mothers.²¹

A study was conducted at Tanzania and it showed that 66.7% of study participants were pregnant between 16-18 years and 90.2% had unplanned pregnancy and of which 2.9% had undergone abortion. It also

showed that a total of 81.8% of the study participants had knowledge about the complications of adolescent pregnancy.²²

Another study was conducted in USA to determine whether young age confers an intrinsic risk of adverse outcomes of pregnancy and it concluded that teenage mothers between 13 to 17 years of age had a 1.4 times significantly higher risk of delivering an infant who had low birth weight or who was delivered prematurely than mothers of 20 to 24 years age²³

A study conducted in New York concluded that young mothers between 13 to 17 years had a nearly 75.0% increased risk of preterm labour. The increased risk was principally attributed to biologic immaturity and moreover young age with low gynaecological age was associated with two fold risk of preterm labour.²⁴

A study was conducted in New Jersey to find the associations between weight gain, pre pregnancy weight-for-height and infant birth weight in a sample of 1419 term deliveries to adolescents. It showed that, the overall incidence of low birth weight in adolescents was 5.0%. and that there was also a significant effect for maternal weight in the direction of lesser overall birth weight among low weight adolescents.²⁵

Another study done in USA showed that low birth weight was noted in 10.8% of young adolescents and neonatal mortality in 4.9 per 1000 live births and these complications had a strong association with young maternal age and the risk decreased as age advanced.²⁶

A study was done in England to quantify the age-related risks of adverse outcomes during pregnancy in women less than 18 years and it showed that the proportion of preterm labour was 6.6% and that of maternal anaemia was 13.9%. Operative vaginal delivery, elective caesarean or emergency caesarean were all less likely in women aged less than 18 years and they were no more likely to have stillbirths or small-for-gestational-age infants than women aged 18–34 years.²⁷

A retrospective review was performed on the obstetric outcomes of teenage pregnancies delivered in 1 year in a tertiary centre in Hong Kong. The results were compared with the rest of the obstetric population in the

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same hospital in the same year. The teenage mothers had increased incidence of preterm labour (13.0%) when compared with the non-teenage mothers. There was no difference in the types of labour, but the incidence of caesarean section was lower (4.1% vs. 12.6 %,) in the teenage mothers. Although the incidence of low birth weight was higher in the teenage mothers (13.5% vs. 6.5%), there was no significant difference in the mean birth weight, gestation at delivery, incidence of total preterm delivery, or perinatal mortality or morbidity.²⁸

A study was done to evaluate a comprehensive adolescent pregnancy program in USA and it showed that 92.0% of study participants were primigravida, 8.0% were multigravida and 84.0% were aged between 15-18 years at the time of delivery. It also stated that hypertensive disorders of pregnancy occurred in 21.5% and anaemia in 43.0% of participants.²⁹

A cross sectional study conducted in Brazil to compare perinatal characteristics among early and late pregnant adolescents showed that low birth weight and preterm birth was present in 14.1% and 10.4% of early and late adolescents respectively and it was found to be statistically significant.³⁰

A retrospective cohort study was conducted in USA to investigate the relationships between infant mortality and maternal age and it showed that the risk of infant, neonatal and post-neonatal mortality were significantly higher for younger adolescent than older mothers which was present in 1.2%, 0.7% and 0.5% of teen mothers respectively. There were no differences in neonatal or post-neonatal mortality risks for older adolescent between 18–19 years mothers.³¹

A study was done in Uruguay to find out whether adolescent pregnancy is associated with increased risks of adverse pregnancy outcomes and it concluded that adverse perinatal outcomes like operative vaginal delivery was present in 3.5 %, post partum haemorrhage in 5.4%, low birth weight in 10.2% and preterm delivery in 10.8% of adolescents and it was significantly higher when compared with adult women.³²

Maternal and foetal outcomes in adolescent pregnancies were studied in Turkey and it was found that first prenatal visit during pregnancy was

significantly later in adolescence group (20 weeks) than that of adult group (15 weeks) and that the mean birth weight of newborns was 3197 ± 569 g and foetal macrosomia was significantly lower in adolescence group compared with adult group. Cephalopelvic disproportion as indication for caesarean section was present in 32.0% of participants and preterm labour in 18.5% and this was found to be significantly higher in adolescent group than that of the adult group.³³

Yet another study was conducted in Turkey to compare the perinatal outcomes of women aged 19 or less with adult pregnancies between 20-38 years-old women and it showed that the ratio of LBW (26.4% vs. 22.9%), malpresentation (23.1% vs. 11.0%), preterm labour (11.1% vs. 4.2%) and eclampsia (5.0% vs. 1.5%) in the adolescent group was significantly higher than that of the control group but caesarean delivery (37.0% vs. 52.7%) was lower in the adolescent group than that of the control group. The ratio of all complicated pregnancies in the adolescent group was significantly higher than that of the control group (49.4% vs. 37.9%).³⁴

A similar study was done in Jordan to know the adverse outcomes of adolescent pregnancies and it showed that there was a significant increase of preterm labour (14.6% vs. 8.0%), forceps delivery (4.5% vs. 1.4%), neonatal intensive care unit admission (22.7% vs. 13.5%) and a lower incidence of caesarean section (7.1% vs. 16.8%) in the teenage group than the control group of adult women. However, medical and obstetric complications including pregnancy-induced hypertension, diabetes mellitus, anaemia, placenta praevia, abruptio placenta and multiple pregnancies were not different in both groups.³⁵

A retrospective cohort study done in Germany to compare the risks for adverse reproductive outcomes of adolescent nulliparae to teenagers who either have had an induced abortion or a previous birth, showed that amongst adolescents with a previous birth, 1.5% had perinatal mortality and 0.9% had neonatal mortality and amongst adolescents with a previous abortion, 1.5% had stillbirths, 7.7% had preterm births and 2.8% had very low birth weight infants.³⁶

Another study was conducted in Canada to characterize the obstetric outcome and prevalence of anaemia in primiparous adolescents and

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compare them with those in older primiparas and it revealed that adolescents were more likely to have a preterm delivery (12.6% vs.7.5%), low birth weight infants (10.1% vs.4.3%) and were 2.5 times more likely than adults to be anaemic at 26 to 35 weeks' gestation and pre-delivery. It also showed that proportion of adolescents delivered by caesarean section was significantly lower than the adults (12.1% vs.27.7%).³⁷

A clinical report on adolescent pregnancies stated that approximately 51.0% of adolescent pregnancies end in live births, 35.0% end in induced abortion and 14.0% result in miscarriage or stillbirth. The incidence of having a low birth weight infant among adolescents is more than double the rate for adults, and the neonatal death rate is almost 3 times higher. The mortality rate for the mother is twice that for adult pregnant women. It was also associated with other medical problems including poor maternal weight gain, prematurity, pregnancy-induced hypertension, anaemia and STDs.³⁸

Obstetric outcomes in nulliparous young adolescents was calculated in Thailand by a retrospective case control study and it showed that the total weight gain during pregnancy, number of antenatal visits and neonatal birth weight were significantly lower in teenagers than control group. It also revealed that 16.5% of young adolescents had anaemia, 19.8% had preterm delivery and 8.3% had preeclampsia and that they were significantly more than the control subjects.³⁹

Another study conducted in Greece to determine the adolescent pregnancy outcomes showed that among the teenage pregnancies, 34.0% resulted in birth, 57.0% in abortions and 9.0% in miscarriage. Toxemia, anemia, premature separation of the placenta and placenta previa were seen in 1.2%, 0.23%, 1.08% and 1.29% of cases respectively.⁴⁰

A study conducted in UK showed that, of the 1,660 pregnancies in the young adolescents, 59.6% were terminations. Anemia was 2.53 times as common in teenagers while hypertension was 1.7 times as frequent. Caesarean section rate in the adolescent group was 0.56 times and forceps deliveries were 2.37 times greater than the control group.⁴¹

A study was conducted in Jabalpur Madhya Pradesh, to know the perinatal outcomes of adolescent pregnancy and it showed that the proportion of short (height <145 cm.): 28.8% vs. 9.4%, underweight (weight <45 Kg.): 38.0% vs. 12.5% and anaemic (Hb <9 g%): 52.5% vs. 37.3% women was significantly higher in the adolescent group.⁴²

Another study conducted in Nagpur Maharashtra, to know the adolescent pregnancy outcomes and complications showed that adolescents had a higher ratio of still births (5.4% vs. 2.4%), low birth weight babies (18.5% vs. 3.8%), toxemia of pregnancy (20.5% vs. 12.6%), preterm labour (16.2% vs. 2.8%) and cephalopelvic disproportion (9.1% vs. 1.8%).⁴³

A cohort study in Kolkata West Bengal, revealed that anaemia (63.0% vs. 43.6%), preterm deliveries (51.7% vs. 25.9%) and low birth weight babies (65.5% vs. 26.4%) were significantly more prevalent in teenage pregnancies.⁴⁴

Another community based study was conducted in Delhi and it showed that 3.0% adolescent and 8.0% adult pregnancies ended pre term. Pregnancy wastage was about six times more common in adolescent pregnancies and presentation other than vertex was reported in 5.0% and 2.5% of adolescent and adult pregnancies respectively. Only one third of adolescents had institutional delivery where as more than half of adults opted for institutional delivery.⁴⁵

Yet another study conducted in New Delhi found that incidence of anaemia (53.8%) and pregnancy induced hypertension (33.7%) was high in adolescent pregnant women. It also showed that appropriate ante natal care reduced the complications of pregnancy and especially low birth weight. Maternal age was however not found to be associated with occurrence of intra uterine growth retardation and preterm deliveries.⁴⁶

A cross-sectional observational study undertaken in Kolkata West Bengal, revealed that the teenage mothers had a higher proportion of preterm deliveries (27.7% vs. 13.1%), low-birth weight babies (38.9% vs. 30.4%) and stillbirth rate (5.1% vs. 0.9%) in comparison with the adult pregnant women. The teenage mothers also developed more adverse perinatal complications such as preterm births (27.7% vs. 13.1%) and neonatal deaths

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(5.1% vs. 1.7%) when compared with those of the adult primigravida mothers.⁴⁷

Yet another study conducted in Nagpur Maharashtra, to determine the consequences of teenage pregnancy showed that adolescents had significantly more ratio of low birth weight babies than adults (39.5% vs. 34.6%). Operative interference and assisted delivery was observed to be significantly less in teenagers than adults and for other complications of pregnancies viz. preterm labor, premature rupture of membrane, placenta praevia, antepartum hemorrhage and outcome viz. congenital anomaly, twins, there were no significant differences between the two groups.⁴⁸

A study was conducted in Delhi to find the determinants and child outcomes of adolescent pregnancy and it stated that besides lower maternal age, lack of education, low socio-economic status, maternal under nutrition and limited access to maternal health services were important determinants of poor pregnancy outcomes. The risk of maternal death was about three times higher in late adolescent girls; and those less than 15 years old were 5 times as likely to die as women in their twenties. Teen mothers also had a higher propensity to experience adverse outcomes such as higher fetal wastage (miscarriage/still births) and the risk of toxemia of pregnancy was three times higher.⁴⁹

A comparative study of teenage primigravidae in Kolkata, West Bengal revealed that incidence of complications of pregnancy like anemia, pregnancy induced hypertension and preterm labor were significantly higher among teenage mothers. The fetal outcome was significantly worse in adolescents with high incidence of perinatal mortality in 8.0% and low birth weight babies in 35.0% of participants.⁵⁰

A study was conducted in Varanasi to know the outcomes of pregnancy and it showed that complications like pregnancy induced hypertension: 11.4% vs. 2.2%, pre-eclamptic toxemia: 4.3% vs. 0.6%, eclampsia: 4.9% vs. 0.6% and premature onset of labor: 26.1% vs. 14.6% occurred more commonly in teenagers compared to adult controls. Teenage mothers also had increased incidence of low birth weight: 50.4% vs. 32.3%, premature delivery: 51.8% vs. 17.5% and neonatal morbidities like perinatal

asphyxia: 11.7% vs. 1.9%. Teenage pregnancy was also associated with higher fetal: 1.9% vs. 0.3%, and neonatal mortality: 3.8% vs. 0.5%.⁵¹

Another comparative study conducted in Miraj Maharashtra, to determine the outcomes of teenage pregnancy showed that the adolescent mothers were nearly three times more at risk of developing anemia, delivering pre-term, twice as likely to develop hypertensive problems in pregnancy and were more likely to deliver vaginally with no significant increase in the risk of assisted vaginal delivery or caesarean section. Teen mothers were nearly twice at risk of delivering low birth weight babies and 50.0% less likely to have normal birth weight babies.⁵²

A study done on the basis of RCH data in Karnataka stated that proportion of teenage pregnancies was found to be more in rural (66.6%), illiterate (71.4%) and those belonging to lower castes (70.0%). This study did not mention about the complications associated with adolescent pregnancy.⁵

A retrospective study in Bangalore showed that mean age of marriage in adolescent pregnant women was 16.5 years and mean age of first pregnancy was 18.1 years. Among the study population 13.2% were illiterate and 56.0% had studied up to high school emphasising the literacy association with early pregnancy.⁶

Another similar study conducted at Bangalore, showed that the mean age at marriage increased significantly with an increase of the educational status of teenage pregnant mothers. The most common reasons for early marriage and early pregnancy were traditional practices and family pressure which were present in 64.0% and 57.7% participants respectively and a total of 63.0% of teenage pregnant girls were not aware of any family planning methods.⁵³

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LIST OF ABBREVIATIONS

ANC	-	Ante Natal Care
ASHA	-	Accredited Social Health Activist
AWW	-	Anganwadi Worker
BMI	-	Body Mass Index
BP	-	Blood Pressure
cms	-	Centimeters
DF	-	Degrees of Freedom
EDD	-	Expected Date of Delivery
FTD	-	Full Term Delivery
g	-	Gram
Hb	-	Hemoglobin
HCL	-	Hydrochloric Acid
Hg	-	Mercury
HIV	-	Human Immunodeficiency Virus
IEC	-	Information Education and Communication
IUCD	-	Intra Uterine Contraceptive Device
Kg	-	Kilogram
LBW	-	Low Birth Weight
LMP	-	Last Menstrual Period
LSCS	-	Lower Segment Caesarean Section
MF	-	Multiplication Factor
mm	-	Millimètre
NFHS	-	National Family Health Survey
NGO	-	Non Governmental Organization
NRHM	-	National Rural Health Mission
OCP	-	Oral Contraceptive Pill
PHC	-	Primary Health Centre
PIH	-	Pregnancy Induced Hypertension
PPH	-	Post Partum Hemorrhage

PTD	-	Pre Term Delivery
PUC	-	Pre University College
RCH	-	Reproductive and Child Health
Rh	-	Rhesus
SD	-	Standard Deviation
SPSS	-	Statistical Product and Service Solutions
STD	-	Sexually Transmitted Diseases
TB	-	Tuberculosis
TT	-	Tetanus Toxoid
UK	-	United Kingdom
USA	-	United States of America
WHO	-	World Health Organization
χ^2	-	Chi Square