

ORIGINAL RESEARCH

TEENAGE PREGNANCY - ITS EFFECT ON MATERNAL AND FETAL OUTCOME

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ABSTRACT

Background: To find complications associated with teenage pregnancies. To find the effects on maternal and fetal outcomes.

Materials and Methods: It was a Quantitative, observational, analytical, prospective cross-sectional study. 100 Study populations were taken by randomization, after applying exclusion criteria. The study was carried out during the year from October 2019 – September 2021 At GGH, Kadapa.

Results: In the present study, 2% of total deliveries conducted in our institution are of teenagers. 74% of pregnant teenage women were 19 years and 18 years old, 4% were under 15 years, and 22% were in the 15-18 years age group. 85% belong to primigravida in our study, and the remaining were high order pregnancies. In our study, 1% is pregnant out of wedlock. The mean age of marriage is 17 years in our study. Only 7% had an occupation in our study. All pregnant teenage women in our study belong to low socioeconomic status. 95% of our study had poor knowledge regarding pregnancy and delivery. 31% of teenage pregnancies were booked. 2% came directly during labour, remaining 67% registered late in pregnancy. Only 4% are short-statured in our study. 4% are undernourished in our study, and 12% are overweight. 73% are anaemic in our study according WHO guidelines. 26% of our study has PIH disorders. 26% had oligohydramnios as a risk factor in our study population. There was a 1% antepartum haemorrhage. In addition, 1% had twins as a risk factor. Malpresentation was seen in 5% of cases. CPD was noted in 19% of the study population. 8% of our study group had premature rupture of membranes. 60% of our study population underwent LSCS, 1% had instrumental deliveries. 39% had a vaginal delivery. Indications for c-section are CPD, which is 19%, followed by oligohydramnios, malpresentation and prior LSCS. 15% of babies in our study were below 2.5 kg. 1% had a congenital anomaly. 7% of babies admitted in NICU.

Conclusion: Teenage pregnancy is a severe social problem prevalent in rural India. Educating on STDs and measures to prevent them together can reduce teenage pregnancies, by which complications of teenage pregnancy can be prevented.

Keywords: Teenage pregnancy, oligohydramnios, CPD, NICU, Malpresentation, primigravida.

INTRODUCTION

Teenage pregnancy is a global problem still found in both developed and developing countries for different reasons. Every 5th child is born to a teenage mother. As a key fact stated by WHO 2020, 21 million teenagers become pregnant in developing countries.^[1] India is one of ten countries with highest number of teenage pregnancies globally. The declining trend in teenage pregnancy is seen with increased literacy among girls and socioeconomic status in the recent era. According to National Family Health Survey 5 (2019-2021),^[1] teenage pregnancy in India decreased to 3.8% in the urban population compared to NFHS 4, but not much change in the rural population.^[1] Tripura has the highest rate of teenage pregnancy (21.9%), followed by West Bengal. Andhra Pradesh has (14.4%) teenage pregnancy in rural areas & with 9.3% in urban areas. In the YSR Kadapa district, in which the study has been taken up, has teenage pregnancies of 10.9% was noted by NFHS 5.^[1]

The age of girl at which she enters into sexual life significantly impacts her fertility. Teenage is a period between puberty & adulthood, completion of physical growth, period of stress and storm during which tranquillity of childhood ends and undergoes physio-psychological transformation, period of rapid growth, hormonal changes, increase at nutrition for herself. So teenage pregnancy is considered a high-risk pregnancy.

Factors Contributing to Teenage Pregnancy are:

1. Early Marriage & Social Customs
2. Low literacy rate
3. Poverty
4. Lack of Sex education
5. Non-usage of contraceptives
6. High-risk behaviour – smoking alcohol, substance abuse, lack of support group
7. Peer pressure, the negative influence of the media, unhealthy environment at home, exposure to domestic or sexual violence.

This study was taken up to bring to light that teenage pregnancy is still a persisting problem that reflects society's development and literacy and analyze recent trends in prevalence and complications of teenage pregnancy.

Infrastructure for providing proper antenatal checkups, safe institutional deliveries, and satisfactory postoperative and postnatal services, including radiological, laboratory, good NICU facilities, and well-trained staff, and good contraception and sterilization facilities are available in this institution in which this study was taken up.

Aims and objectives

Aim

1. To find complications associated with teenage pregnancies.
2. To find the effects on maternal and fetal outcomes.

Objective

- **Primary objective**
 - a. To find out various complications associated with teenage pregnancy
 - b. To find out effects on maternal and fetal outcome
- **Secondary objective**
 - a. To find out Incidence of teenage pregnancy.
 - b. To find out demographic factors influencing teenage.

MATERIALS & METHODS

Place of Study: Government General Hospital, Kadapa.

Period of Study: October 2019 – September 2021.

Study Design: Quantitative, observational, analytical, prospective cross-sectional study.

Study Population: 100 Study populations were taken by randomization, after applying exclusion criteria.

Statistical Analysis: mean and frequency are used for analysis in our study.

Source of Data: In our institution, nearly 9000 deliveries occur per year, out of which nearly 180 cases of teenagers come to the department. From which by randomization, 120 patients were taken and after applying exclusion criteria, 100 patients were taken into study. Information regarding age, educational status, occupation, health awareness, marital status, age at marriage, knowledge about pregnancy and delivery, and antenatal visits were obtained in the history. Basic investigations like the weight and height of pregnant women with haemoglobin and BP are checked regularly. Early detection of any complications during the antenatal period, perinatal period, and the postpartum and puerperal period should be observed. Detailed notes of the mode of delivery and the events during delivery. Weight of the baby and other details are noted, and babies have been admitted to the neonatal ward followed up until they were discharged healthily. Delivered mothers along with their babies were followed up to discharge, and any abnormal events that happen were noted.

Inclusion criteria:

- Ages between 13 to 19 years.

Exclusion criteria:

- Age above 20 years.
- Previous medical complications.

Methodology:

- This study got approved by the ethics committee
- Proper Informed consent was taken from patients.
- A structured proforma was prepared and shared among co-postgraduates for collecting cases(Annexure-I)
- The study included all the antenatal patients presented to GGH, Kadapa aged 13-19 years at any time of gestation.
- Patient obstetric history with an emphasis on demographic factors is taken.
- Proper follow up of patient throughout the antenatal period from the day of registration and maternal-fetal outcome noted in all cases

- Delivery details and postoperative complications were noted and filled in the master chart. (Annexure 4)
- Results obtained were analyzed by statistical analysis.

RESULTS

A. Demographic Variables

Table: 1 Age Wise Distribution

Age	Number	Percentage
13 years	2	2%
14 years	2	2%
15 years	4	4%
16 years	3	3%
17 years	15	15%
18 years	37	37%
19 years	37	37%

In our study, about 74% are above 18 years, which is acceptable considering 18 years as the legal age for marriage in India. On the other hand, only 4% are under 15 years, but still high considering the sample size, which is alarming, even with strict laws like the child marriage prohibition act and restraint.

a. Parity

Majority of cases, 85% are primigravida, 15% are pregnant for second time in teenage itself in our study.

Table: 2 Marital Status

Marital Status	Number	Percentage
Married	99%	99%
Unmarried	1%	1%

In our study, only 1% was pregnant out of wedlock.

Table: 3 Marital Life

Marital life	Number	Percentage
1 year-2 years	70	70%
2 year-3 years	22	22%
<3 year	8	8%

In our study, more than 70% are conceived within 1 year, showing a high fertility rate in a teenager. Early marriage affects not only physical health but also mental health.

Table: 4 Occupational Status

Occupation	Number	Percentage
Working	7	7%
Non-Working	93	93%

The majority of teenagers are solely dependent on guardians. Yet, only 7% of our study is working.

Table: 5 Knowledge about Pregnancy and Delivery

Knowledge	Number	Percentage
Good	5	5%
Poor	95	95%

Most teens do not know the basics of pregnancy, and criteria were taken for considering good knowledge are what constitutes high-risk pregnancy, the need for antenatal checkups, nutritional requirements, the basics of delivery, taking care of baby, breastfeeding, immunization, contraception knowledge.

a) Antenatal Complications

Table 6: 1st Antenatal Visit

Trimester	Number	Percentage
First	69	69%
Second	25	25%
Third	4	4%
No visits	2	2%

In 31% of teens, pregnancies were unbooked. In addition, antenatal checkups were irregular due to fear of the hospital environment, poor knowledge, and financial dependency.

Table 7: Height

Height	Number	Percentage
< 145cm	4	5.26%
>145cm	72	94.73%

Only 4 % of our study shows short statured which is <145 cms. 95 % of the study population is above 145 cm.

Table 8: BMI

BMI	Number	Percentage
<18.4	4	4%
18.5-24.4	83	83%
>24.5	12	12%
.30	1	1%

In our study, 4% undernourished. 12% are overweight in our study shows recent changes in dietary lifestyle changes leading to obesity in teenagers which might cause future significant risk factor.

Table 9: Anaemia

Hb	Number	Percentage
> 11g%	27	27%
7to 10.9g%	72	72%
< 7 g%	1	1%

Following WHO and ICMR guidelines. In our study, most teenage pregnant women had moderate anaemia, which shows a need for excessive nutrition for growth and pregnancy.

Table 10: Other Antenatal Risk Factors

Complication	Number	Percentage
Pih Disorders	26	26%
Oligohydromnios	26	26%
Preterm	18	18%
Pastdates	17	17%
Prior Lscs	10	10%
Malpresentation	5	5%
Antepartum Hemorrhage	1	1%
Polyhydromnios	1	1%
Twins	1	1%

In our study, PIH disorders and oligohydramnios are major risk factors encountered in teenage pregnancy.

Preterm is another risk factor higher compared to past dates in this study population Malpresentations are seen in 5% of cases other risk factors noted in the study are prior LSCS, APH, polyhydramnios, twin gestation.

Table 11: Complications during Labor

	Number	Percentage
Cpd/Contracted Pelvis	19	19%
Prom	8	8%
Failed Induction	4	4%
Fetal Distress	4	4%

A significant complication during labour is contracted pelvis followed by prom in our study.

Table 12: Postpartum Complications

Complications	Number	Percentage
Fever	3	3%

There is not much increase in post-op sepsis in our study. While in other studies, there were other complications like postoperative psychosis, postoperative blues. 3% of our study had wound infections.

Table 13: Mode of Delivery

Mode of Delivery	Number	Percentage
Normal Labor	39	39%
Instrumental Deliveries	1	1%
LSCS	60	60%

An increase in operative interference was noted in our study. 60% delivered.

Table 14: Indications for LSCS

Indication	Number	Percentage
CPD	18	18%
Oligohydramnios	22	22%
Prior Lscs	9	9%
Malpresentation	3	3%
Fetal distress	2	2%
Failed induction	4	4%
Oligo+fetal distress	1	1%
Oligo+breech	1	1%
Oligo+priorlscs	1	1%
Cpd+oligohydramnios	1	1%

Indication for LSCS mostly being oligohydramnios followed by CPD, prior LSCS, in our study which increased operative interference.

C) Postoperative Complications

Table 15: Birth Weight

Birth Weight	Number	Percentage
< 2.5kg	15	15%
2.6 – 3.5Kg	83	83%
> 3.5kg	2	2%

15% in our study are low birth weight babies. However, 83% of babies were in the normal range.

Table 16: Perinatal & Neonatal Complications

Complication	Number	Percentage
Low birth weight	6	6%
Preterm	19	19%
Congenital anomaly	1	1%
IUGR	1	1%

Preterm was noted in 19% of our study population. The low-birth-weight noted in 6% of our study population 1% has a congenital anomaly.

Table 17: NICU Admission

NICU Admission	Number	Percentage
Yes	7%	7%
No	93	93%

7% cases admitted in NICU admission and the remaining are healthy.

DISCUSSION

The study on teenage pregnancy was taken to study complications of mother and fetus. As teenage pregnancy is considered a high-risk pregnancy due to various causes such as physical, mental immaturity, lack of knowledge resulting in more complications

A. Demographic Variables

a. Maternal Age

In our study, 4% of patients are below 15 years. 74% is 18 years and above, which is considered normal as the age approved for marriage is 18 years. 22% of our study population is between 15 to 18 years. In addition, this study shows an increase in teenage pregnancy compared to previous studies done by Bhalerao, showing that 7% belong to 15-17 years.^[5]

But compared to a study done by Kumar Ashok 2007, 33% are 15-17 years, and our study results show improvement.^[6]

Results of our study show an increase in trend compared to the study of Renuka 2008, in which only 2% are in the 15-17 years category.^[7]

Soula O et al.'s (2001) study included pregnant teenagers under 15 years of age,^[19] whereas Goonewardane (2005) studied teenagers in two groups, 13-16 years and 17-19 years,^[20]

The findings in these studies on teenage pregnancy varied depending on the upper limit of age taken in those studies. For example, the result of our study showing 26% less than 18 years of age might be because our study was done in a backward area, where the literacy rate is too low, considering teenage pregnancy as a norm.

a) Parity

In our study, primigravida was 85%. 15% of our study population belongs to high order pregnancies. Compared to other studies, there is not much difference in Gravida.

Table 18: Comparison with previous studies

Name of Study	Percentage of primigravida
Bhalerao AR etal, ^[5]	85%
Thekkekkara etal, ^[21]	79.1%
Rajeswari 2008, ^[22]	86%
Jeejabhoy etal, ^[9]	83%

Results also show high fertility rates.

b) Marital Status

Our study shows that only 1% study population got pregnant out of wedlock. All others were married. Although pregnancy out of wedlock is common in developed countries, it is not entirely nonexistent in India, and factors may be due to poor knowledge, peer pressure, high crime rate due to illiteracy.

In Bhalerao's study, 3% of the study group was unmarried.^[5]

In Kumar Ashok's 2013 study, all the teenagers in the study group were remarried.^[6]

Renuka's 2008 study shows that 1.33% are unmarried.^[7]

c) Marital Life

70% of our study population was delivered a baby within 1.5 years of marital life, which shows a high fertility rate in teenagers. According to Jeejabhoy, 17% of all teenage pregnancies aged 13-19 years were mothers or are pregnant with first child.^[9]

Renuka 2008 study shows that more than 80% of teenagers conceive within one year of marriage.

Thekkekkara et al. (2003) study show the mean interval between marriage and childbirth is 1.1 year.^[21]

d) Mean Age of Marriage

Mean age of marriage is 17 years in our study where compared other studies coincide other studies which were Chahande etal,^[17] - 16.7 years.

Sharma AK etal,^[13] - 17 years

Thekkekkara etal,^[21] - 16.5 years

Rajeswari 2008,^[22] - 17.17 years

These numbers state that even with the country's strict laws, early marriages are taking place even in the recent era, which shows the backwardness & illiteracy of the society from which the study population is taken up.

e) Occupational Status

Teenagers were solely dependent on guardians. However, 7% were working in our study. 7% constitutes majorly daily wagers. 1 person was a student. These results show economic backwardness, illiteracy of females. Mezmur 2021 study in Ethiopia shows that only 8.6% are working, and others are not working.^[23]

A study by Ayele 2019 shows that 11% are employed.^[10]

0.6% are employed in the study done by Renuka 2008.^[7]

f) Knowledge Regarding Pregnancy

Questionnaire to test the knowledge regarding pregnancy and labour was included risk of pregnancy, any knowledge about contraception, knowledge regarding labour, breastfeeding, and risk factors to be looked at in a newborn.

Just 5% had minimum knowledge regarding the above questions; while others had poor knowledge the above questionnaire.

g) Socioeconomic Status

Our study population entirely belongs to low socioeconomic status.

B. Antenatal Complications**a) Registration of Pregnancy**

The first visit to a doctor during pregnancy is called registration of pregnancy in our study, 69% of cases registered early in 1st trimester, all others registered late, and 2% never had any antenatal visits. Regular antenatal checkups and proper antenatal checkups would reduce the risk of teenage pregnancy; we could provide better care and prevent adverse effects. 31% have no proper antenatal care in our study 1/3rd of pregnancy receive insufficient care in a study done Guttamer institute,^[11] often comes in 3rd trimester by Makinson.C.1985,^[12] & only 40% of cases register early [Sharma AK et al. 2003].^[13]

14% are unbooked in a study by Rajeswari 2008,^[22] 8% are unbooked in a study by Renuka 2018.^[7] Compared to older studies, our study shows better antenatal care, and inadequate antenatal care was clearly shown in the results.

Goldenberg 2005 pregnancy complications arise when prenatal care is inadequate,^[15] & Teenage pregnancy is considered high risk only if proper antenatal care is not taken [Geist RR 2006].^[14]

b) Height

In our study only 4% are short-statured, less than 145 cm.

c) BMI

In this study, 13% are above normal BMI, which shows the sedentary lifestyle, dietary habits which causes future problems & 4% are undernourished in our study. Mapanga states 16% are undernourished.^[2]

This improvement in results was considered better nourishment and better care to pregnant women might be a reason.

d) Anaemia

In our study, 72% are moderately anaemic & 1% is severely anaemic (following WHO guidelines). The Incidence of anaemia in older studies.

Table19: Comparison with previous studies

Study	Percentage
Bhalerao (1990), ^[5]	25.5%
Israel and Wonderz (1963), ^[24]	26%
Ghose and Ghosh (1963), ^[25]	24%
Yasmin, ^[8]	8%

The difference in values is primarily because of using different cut off for anaemia in different study groups Kaminetzky et al. (1973) have shown a relationship between maternal malnutrition and increased anaemia, pre-eclampsia, prematurity, and low birthweight in teenagers.^[26]

Rajeswari 2008, study shows that 88% of teenagers pregnant had anaemia. (WHO guidelines).^[22] Renuka 2008 shows the incidence of anaemia is 68% (WHO) guidelines.^[7]

Results of our study correlate with studies using the same WHO guidelines. Because the study population was from a lower socioeconomic status and the criteria used, the prevalence of anaemia is higher.

e) **Pregnancy-Induced Hypertension Disorders**

The Incidence of PIH disorders in our study was 26%, ranging from gestational hypertension to ante and postpartum eclampsia which was higher compared to older studies and similar to recent studies.

Table 20: Comparison of Pregnancy-Induced Hypertension Disorders with previous studies

Study	Percentage of Incidence
Bhalereo (1990), ^[5]	10%
Pratinidi(1990), ^[27]	11%
Sharma (2001), ^[13]	7%
Renuka(2008), ^[7]	9%
Rajeswari 2008, ^[22]	25%
Porozhonova et al, ^[28]	32%
Chahande, ^[17]	20.5%

Results of our study correlate with Rajeswari (2008) and also with the other studies.

a) **Oligohydramnios**

Unique to all other studies, our study shows that 26% of cases have complications of oligohydramnios. Whereas only 2 % in a study by Renuka.(2008)^[7]

Whereas other studies do not emphasize oligohydramnios, it is important factor that increased operative interference in our study in the best interest of the fetus. These results might be due to overemphasis on parameters

b) **Other Antenatal Complications**

The other complications that were noted in our study were

Preterm -8%

Past dates -17%

Prior LSCS -10%

Malpresentation- 5%

Abruption -1 %

Twins -1%

These risk factors are also noted in other studies with little difference

i. Preterm Labor

In our study, 18 % of cases had a preterm delivery, similar to older studies, which increased perinatal morbidity and mortality.

In a study by Rajeswari 2008 -19% were preterm.^[22]

In a study by Renuka 2008- 4% were preterm.^[7]

A study by Indrati 2015 shows that 50% were preterm.^[29]

ii. Past Dates

Interestingly in our study, past dates also show an increase in trend while other studies have given no proper information regarding past dates.

17% showed postdated pregnancy in our study compared to prior studies. Ayele 2019 study showed that 9.5% have postdated pregnancy.^[10]

iii. Prior LSCS

10% of our study cases are already prior LSCS without proper details regarding the uterine incision during prior delivery, which significantly increased operative interference.

Only 4% in a study by Renuka 2008 had prior LSCS as an antenatal risk factor¹¹. Other studies have no information regarding prior LSCS.

However, it increased operative interference in our study.

iv. Malpresentation

5% of our study cases had malpresentation as a risk factor that increased operative interference. Other studies also show similar results.

Rajeswari (2008)- 7.6%,^[22]

Renuka (2008)- 2.6%,^[7]

Malpresentation are common in teenage pregnancy due to improper growth of the pelvis leading to less space to accommodate the head in the lower segment leading to malpresentation.

v. Twins

In our study, 1% of cases are multifetal presentation 2% have risk factors as twins in the study of Rajeswari 2008.^[16] In addition, 1% of cases have risk factors as twins in the study of Renuka 2008.^[5] It might also be a reason for increased operative interference.

vi. Other Complications

No other evidence of an increase in gestational diabetes, heart disease, liver disorders in mothers 1% cases IUD as a risk factor.

C. Complications During Labor**a. Contracted Pelvis**

In this study, 19% of study cases have contracted pelvis. Contracted pelvis and cephalopelvic disproportion are higher in teenagers as pelvic bone development is not complete yet, but growth spurt is adequate to prepare for parturition. So mostly CPD. occurs before 15 years.

Recent studies show there is not much difference in CPD in their study and control group. Even our study also corresponds to the older studies group.

Renuka 2008 shows that 10% of the study population has the complication of CPD.^[5] On the other hand, the Incidence of CPD in Bhalerao(1990) study was 1.5%.^[3] The Incidence of CPD of Philips and Sivakamasundari(1978) was 2.6%.^[12] This increase in percentage might be because of over diagnosis of CPD.

a) PROM

In our study, premature rupture of membranes occurred in 8%. It was similar to past studies. A study by Renuka 2008 shows an incidence of 9%.^[5] A study by Rajeswari 2008 shows an incidence of 3%.^[16]

b) Other Complications

In our study, there were no other complications arise during labour. No evidence of PPH retained placenta, complete perineal tear, and prolonged labour. Previous studies also show there are shreds of evidence of prolonged labour, precipitate labour, and cord prolapse, retained placenta, complete perineal tear, PPH. In those studies which were conducted between the study and control group, there was no significant difference in the above complications. It may be because the study population included randomization and does not include these complications, whereas other studies show these complications arise in teenage pregnancy.

D. Postoperative Complications

Post-op complications in our study show no rise in postoperative pyrexia, no local sepsis, psychosis 3% have wound infection in our study 5% have required blood transfusion due to clinical pallor in the Postoperative study.

Previous studies by Renuka 2008 show an increase in postoperative complications like the fever of 5%. Puerperal psychosis of 1%.^[5] In our study, there is no evidence of puerperal psychosis.

E. Mode of Delivery

There was a significantly higher rate of c-section than vaginal delivery in our study, C-section being 60% compared to vaginal of 39%. It is probably because of higher complications in our study group that needed an operative interference. Indications for c-section in our study primarily by oligohydramnios followed by cephalopelvic disproportion immediately followed by prior c-section followed by failed induction of labour Malpresentations, multifetal gestation also increased the operative interference in this study.

F. Neonatal Complications**a) Prematurity**

Our study shows that 19% of cases were delivered prematurely before the term. These results were similar to a previous study showing a similar pattern but not all the cases needed NICU admission.

A study by Renuka 2008 shows prematurity of 4%.^[5]

A study by Ayele 2019 shows prematurity of 12%.^[18]

b) Low Birth Weight

6% of our study population was low birth weight this result shows that increase in maternal demand for nutrition compromises the baby. A study by Bhalerao shows a low birth weight of 44%.^[3]

A study by Kumar Ashok 2006 shown a low birth weight of 87%.^[4]

A study by Renuka 2008 show of low birth weight of 38%.^[5]

A study by Ayele 2019 shows of low birth weight of 17%.^[18]

c) NICU Admission

7% of our study population's neonates were admitted to NICU 7% needed NICU care for prematurity and low birth weight. A study by Renuka 2008 shows 34% of NICU admission.^[5]

The remaining 92% of other babies in our study were healthy during discharge. 1% being IUD.

These results of our study were less than previous studies being 34 % NICU admission. It might be due to difference in the study population taken.

G. Congenital Anomaly

1% of our study population have a congenital anomaly, meningocele. Congenital anomaly has been 1% compared to other studies showing 0.3% in Renuka 2008.^[5] Various other studies and our study show evidence of maternal and fetal complications that might be morbid to both mother and child. So teenage pregnancy should be discouraged by increasing the age of marriage for girls, Educating girls and social campaigns against teenage pregnancy.

Limitations of the study were that this study was done during the COVID pandemic, in which antenatal mothers had poor antenatal care. Also, my study sample size being small might cause errors in study results. Taking a more extensive population might have decreased the chance of errors. Taking patients from the first trimester and including abortions into the study might give more appropriate results.

CONCLUSION

Teenage pregnancy is a severe social problem prevalent in rural India. Various measures are being taken up to prevent teenage pregnancy throughout the world. Educating and creating awareness about problems effects of teenage pregnancy, socially, economically, mentally, and physically. In addition, teenage clinics initiated by FOGSI help educate girls. Family welfare clinics provide excellent services, provides contraception, MTP services. Sex education in schools, contraceptive usage, social campaigns regarding the problem in the form of plays, lectures can also reduce the guidance of teenage pregnancy. The government should strictly enforce laws, providing better MTP services, medical personnel, social workers, and the educational system providing sex education in school. Educating on STDs and measures to prevent them together can reduce teenage pregnancies, by which complications of teenage pregnancy can be prevented.

REFERENCES

1. National family health survey 5.
2. Mapanga KG. The perils of adolescent pregnancy. *World Health.*1997;50(2):16-7.
3. www.pai.org.
4. Nag RN; Adolescent in India. Medical Allied Agency, Calcutta 1982.
5. Bhalerao AR, Desai SV, Dastur NA, Daftary SN. Outcome of teenage pregnancy. *Journal of postgraduate medicine.* 1990 Jul 1;36(3):136.
6. Kumar A, Singh T, Basu S, Pandey S, Bhargava V. Outcome of teenage pregnancy. *Indian J Pediatr.* 2007;74(10):927-931. doi:10.1007/s12098-007-0171-2.
7. Renuga Devi C. Maternal and fetal outcome in teenage pregnancy (Doctoral dissertation, Kilpauk Medical College, Chennai).
8. Yasmin G, Kumar A, Parihar B. Teenage pregnancy-its impact on maternal and fetal outcome. *International journal of scientific study.*2014;1(6):9-13.
9. Jeejabhoy SJ; Adolescent sexual health and reproductive behaviour. *Socio. Sci. Med.* 1998; 46: 10.

10. Abebe AM, Fitie GW, Jember DA, Reda MM, and Wake GE. Teenage pregnancy and its adverse obstetric and perinatal outcomes at Lemlem Karl Hospital, Tigray, Ethiopia, 2018. *BioMed research international*. 2020 Jan 19;2020.
11. York R, Williams P, Munro BH. Maternal factors that influence inadequate prenatal care. *Public Health Nursing*. 1993 Dec;10(4):241
12. Makinson C. The health consequences of teenage fertility. *Family Planning Perspectives*. 1985 May 1:132-9.
13. Sharma AK, Chhabra P, Gupta P, Aggarwal QP, Lyngdoh T. Pregnancy in adolescents: A community based study. *Indian J Prev Soc Med*. 2003;34(1):24-32.
14. Geist RR, Beyth Y, Shashar D, Beller U, Samueloff A. Perinatal outcome of teenage pregnancies in a selected group of patients. *Journal of pediatric and adolescent gynecology*. 2006 Jun 1;19(3):189-93
15. Goldenberg P, Figueiredo MD, Silva RD. Adolescent pregnancy, prenatal care, and perinatal outcomes in Montes Claros, Minas Gerais, Brazil. *Cadernos de saude publica*. 2005;21:1077-86.
16. Briggs MM, Hopman WM, Jamieson MA. Comparing pregnancy in adolescents and adults: obstetric outcomes and prevalence of Anaemia. *Journal of Obstetrics and Gynaecology Canada*. 2007 Jul 1;29(7):546-55.
17. Chahande MS, Jadhao AR, Wadhva SK, Ughade S. Study of some epidemiological factors in teenage pregnancy-hospital based case comparison study. *Indian Journal of Community Medicine*. 2002 Jul 1;27(3):106.
18. Chen XK, Wen SW, Fleming N, Demissie K, Rhoads GG, Walker M. Teenage pregnancy and adverse birth outcomes: a large population based retrospective cohort study. *International journal of epidemiology*. 2007 Apr 1;36(2):368-73.
19. Soula O, Carles G, Largeaud M, El Guindi W, Montoya Y. Pregnancy and delivery among adolescents under 15: a study of 181 cases in French Guiana. *Journal de gynecologie, obstetrique et biologie de la reproduction*. 2006 Feb 1;35(1):53-61.
20. Goonewardene IM, Waduge RP. Adverse effects of teenage pregnancy. *Ceylon Medical Journal*. 2009 Dec 9;50(3).
21. Thekkekkara T, J. Veenu; Factors associated with teenage pregnancy, *Ind. J. Community Med*. 31(2) April-Jun, 2006: 83.
22. Rajeswari K. A study on determinants and foeto-maternal outcome in teenage pregnancy (Doctoral dissertation, Madras Medical College, Chennai).
23. Mezmur H, Assefa N, Alemayehu T. Teenage Pregnancy and Its Associated Factors in Eastern Ethiopia: A Community-Based Study. *International Journal of Women's Health*. 2021;13:267.
24. Israel SL, Woutersz TB. Teenage obstetrics: A cooperative study. *American journal of obstetrics and gynecology*. 1963 Mar 1;85(5):659-68.
25. Ghose N, Ghosh B. Obstetric behaviour in teenagers. (a study of 1138 consecutive cases). *Journal of obstetrics and gynaecology of India*. 1976 Oct;26(5):722-6.
26. Kaminetzky HA, Langer A, Baker H, Frank O, Thomson AD, Munves ED, Oppen A, Behrle FC, Glista B. The effect of nutrition in teenage gravidas on pregnancy and the status of the neonate: I. A nutritional profile. *American journal of obstetrics and gynecology*. 1973 Mar 1;115(5):639-46.

27. Pratinidhi A, Shrotri A, Shah U. Risk of teenage pregnancy in a rural community of India. *Indian J Matern Child Health*. 1990;1(4):134-138.
28. Porozhanova V, Bozhinova S. Pregnancy and labor in young girls. *Akusherstvoiginekologiya*. 1994 Jan 1;33(3):5-7.
29. Indarti J, Al Fattah AN, Dewi Z, Hasani RD, Mahdi FA, Surya R. Teenage pregnancy: Obstetric and perinatal outcome in a tertiary centre in Indonesia. *Obstetrics and gynecology international*. 2020 Mar 26;2020.