



Frequency of Various Complications in Teenage Pregnancy and Adult-Age Pregnancies: A Cross-Sectional Study

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ABSTRACT

Introduction: A major public health issue in the world is teenage pregnancy and its consequences. Sixteen million birth occurs in teenage pregnant women between 15-19 years of age in the world.

Aim/Objectives: To find the frequencies of pre-eclampsia, postpartum hemorrhage, birth asphyxia, anemia and intrauterine death (IUD) in teenage pregnancy and adult-age pregnancy.

Methodology: A total of two hundred patients were booked for ante-natal care and patients were divided into two different groups equally i.e., teenage pregnancy and adult-age pregnancy (TP Group and AP Group). Teenage pregnancy group ranged from 14 to 19 years, and AP Group ranged from 20-30 years. One hundred (100) pregnant ladies were registered for each group. Those pregnant women who had co-morbid were excluded from the study. Pregnant women were booked for ante-natal care from twenty-eight weeks of pregnancy to forty-one weeks of pregnancy for both groups.

Result: The mean age of pregnant women was 16.25 ± 4.90 years in the teenager pregnancy group (TP Group) and 26.00 ± 5.00 years in the adult-age pregnancy group (AP Group). The mean BMI of patients was $24.50 \pm 0.75 \text{ kg/m}^2$ in the TP Group while it was $26.25 \pm 3.50 \text{ Kg/m}^2$ in the AP Group. The concentration of mean hemoglobin was $9.25 \pm 0.75 \text{ mg/dl}$ in the teenager pregnancy group and it was $12.50 \pm 0.50 \text{ mg/dl}$ in the adult-age group (AP Group) and the p-value was 0.003 (significant). Mean systolic blood pressure was 130mm of Hg in the TP Group, and 120mm of Hg in the AP Group while mean diastolic blood pressure was 85mm of Hg in Teenage pregnancy and 75mm of Hg in Adult-age pregnancy. Anemia, pre-eclampsia, intrauterine death (IUD), postpartum hemorrhage (PPH) and birth asphyxia were more in the teenage pregnancy group as compared to the adult-age pregnancy group. The mean gestational age in teenage pregnancy was 30.75 ± 1.25 weeks and it was 38.80 ± 0.70 week in the adult-age pregnancy group.

Conclusion: The frequency of pre-eclampsia, postpartum hemorrhage, birth asphyxia, intrauterine death and anemia were more in teenage pregnancy (TP Group).

Key Words: Pre-eclampsia, Teenagers, Adult age pregnancy, Birth asphyxia, Postpartum hemorrhage, Teenage pregnancy group (TP Group)

INTRODUCTION

A major public health issue in the world is teenage pregnancy and its consequences. Sixteen million birth occurs in teenage pregnant women between 15-19 years of age in the world. Among these ninety-five percent of baby delivered in very poor countries. Early and Primi- pregnancy is very dangerous for the health of teenagers. In poor countries, the

major causes of death were due to complications of pregnancy. When teenage girls become pregnant, their education is compromised and their earnings is also reduced. Domestic violence, suicide and homicide is also seen in teenage pregnancy.¹

A study published in Thailand revealed that 30% of the male gender and 75% female gender were involved in sexual activity

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between the age of 15-18 years, and they don't know about fertilization, pregnancy and contraceptive methods and material.²

Pregnancy in girls between 10 to 19 years old age is defined as teenage pregnancy. In the whole world 11% of birth occurred in teenagers between the ages of 15-19 years.³

Impacts of teenage pregnancy were noted in teenage mothers, fathers of newborns, newborns, and their parents and as well in grandparents too. Teenage pregnancy has a vicious cycle of ill health.⁴

Teenage pregnancy has opposing effects i.e., low birth weight, small for gestational age, prematurity, neonatal maturity and post-natal mortality.⁵ Teenage is defined as the period between childhood to adulthood. WHO explained age duration of teenage is 10 -19 years. Teenage pregnancy is an attentive and important topic for the world. It is increased in developing countries. Early marriages and after marriage first early pregnancy are very common in India.³

Different complications may occur before three months of gestation in teenage pregnancy i.e., hematoma (intrauterine), vaginal bleeding, miscarriage (recurrent), and hyperemesis, any one complication may be lethal for the teenage pregnant women.⁵

Deficiency of sex education, absence of knowledge and unproductive utilization of available modern contraceptives are the main reasons for teenage pregnancy.⁶ Teenage pregnancy is the most important matter for both developing and developed countries.⁷

The current study is planned to find the frequencies of pre-eclampsia, postpartum hemorrhage, birth asphyxia, anemia and intrauterine death (IUD) in teenage pregnancy and adult-age pregnancy.

Study Design: Cross-sectional study

Place and duration of study: Department of Obstetrics and Gynecology, Social security Landhi Hospital, Karachi and total duration was twenty months i.e., 1st Feb 2020 till 30th September 2021.

Methodology

This research was conducted after receiving written informed consent from the patients and written permission from the institutional ethical committee. Two hundred (200) pregnant women were enrolled for antenatal care from Out Patients Department. Patients were divided into two equal groups i.e., TP Group (teenage pregnancy group) and AP Group (adult-age pregnancy group). In TP Group, the age range was 14- 19 years and in AP Group, the age range was 20- 30 years. One hundred pregnant women were enrolled for both groups. Patients who had co-morbid conditions like Hypertension, Diabetes, cardiac/endocrine/renal/liver diseases, rickets/polio, and who had bony injury of the pelvis

were excluded from the study. Pregnant women were booked for the ante-natal check-up from twenty-eight weeks to forty-one weeks of pregnancy for both groups. Proper history was taken and written down in the patient's ante-natal card/file, and general physical examination, systemic examination, and obstetrical examination were performed. Investigations were advised to the patients i.e., Complete Blood Count, Urine analysis and detail report, fasting and random blood sugar, and viral markers for Hepatitis B and Hepatitis C and ultrasound scan for FWB in the 1st checkup (for antenatal care) and acknowledged on antenatal record card/file. Those pregnant women who had high blood pressure were admitted to the ward for monitoring and treatment and their blood pressure was rechecked after six hours to exclude PIH (pregnancy-induced hypertension) or pre-eclampsia, and further management was done, those pregnant who were normotensive or hypotensive, were sent to home and advised them to come back for the next antenatal visit along with the already prescribed investigations. On the next antenatal visit, reports were checked for anemia, blood sugar level, urine analysis for albuminuria, and ultrasound scan for obstetrical pathology. Regular antenatal checkup was done and continued till the term. Postpartum hemorrhage, anemia, pre-eclampsia, intrauterine death, and birth asphyxia were noted. Data were entered and analysed in the SPSS software version. 20.

RESULTS

Table 1: Showed the different variables in the teenage pregnancy group and adult-age pregnancy group. Pre-eclampsia was noted in 10 pregnant women in teenage pregnancy (TP Group), and it was in 4 pregnant women in adult-age pregnancy (AP Group). Postpartum hemorrhage (PPH) was noted in 30 pregnant women in the teenage pregnancy group (TP Group), and PPH was observed in 8 pregnant women in the adult-age pregnancy group (AP Group). Intrauterine death (IUD) was in 8 patients in the teenage pregnancy group and three IUDs in the adult age pregnancy group. In newborns, the frequency of birth asphyxia was 42 in the teenage pregnancy group (TP Group), and 14 in the adult-age pregnancy (AP Group).

Table 2: showed that the mean age of mothers was 16.25 ± 4.90 years. in TP Group (Teenage pregnancy) and the mean age of mothers was 26.00 ± 5.00 yrs. in the adult-age pregnancy group (AP Group). The mean BMI of pregnant was 24.50 ± 0.75 kg/m² in the teenage pregnancy group (TP Group) and BMI was 26.25 ± 3.50 Kg/m² in the adult-age pregnancy group (AP Group). The mean of gestational age was 30.75 ± 1.25 weeks at a delivery time in the teenage pregnant group (TP Group), and it was 38.80 ± 0.70 weeks in the adult-age pregnant group (AP Group). The mean concentration of hemoglobin in pregnant was 9.25 ± 0.75 mg/dl in the TP Group and 12.50 ± 0.50 mg/dl in the AP Group

(adult-age pregnancy group). This study found that anemia is more in the teenage group patients and the p-value was significant i.e., <0.003 .

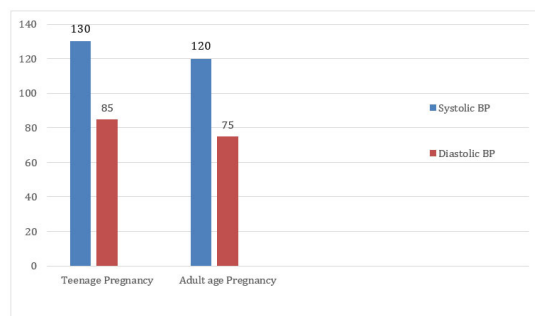
Graph 1 shows the mean systolic and diastolic blood pressure in the teenage pregnancy group (TP Group) and in the adult-age pregnancy (AP Group). Mean systolic blood pressure was 130 mm of Hg in the teenage pregnancy group and it was 120 mm of Hg in the adult-age pregnancy group. Mean diastolic blood pressure was 85 mm of Hg in the teenage pregnancy group and 75 mm of Hg in the adult-age pregnancy group.

Table 1: Comparison of different variables in teenage pregnancy (TP Group) & adult-age pregnancy (AP Group) N=200

	TP Group (Teenage pregnancy)	percent (%)	AP Group (Adult- age preg- nancy)	percent (%)
Pre-eclampsia	10	10	4	4
Postpartum hemorrhage	30	30	8	8
Birth Asphyxia	42	42	14	14
Intrauterine death (IUD)	8	8	3	3

Table 2: Comparison of different variables in teenage pregnancy and adult-age pregnancy. N=200

	TP group (Teenage pregnancy)	AP group (Adult-age pregnancy)
Mean age (Maternal) in yrs.	16.25 $\pm$ 4.90	26.00 $\pm$ 5.00
B.M.I. (mean) in kg /m ²	24.50 $\pm$ 0.75	26.25 $\pm$ 3.50
Mean gestational age (weeks)	30.75 $\pm$ 1.25	38.80 $\pm$ 0.70
Mean hemoglobin concentra- tion (gm/dl)	9.25 $\pm$ 0.75	12.50 $\pm$ 0.50



Graph 1: Mean systolic and diastolic blood pressure in Teen-age and Adult-age pregnancy.

DISCUSSION

In a study, anemia was 33% in the teenage pregnancy group and 20.3% in the adult-age pregnant women, pre-eclampsia was 68% in the teenager group and 59.3% in the adult-age pregnant and the p-value was <0.0001 (significant). PPH was 3.3% in the teenage group while 5.7% in the adult-age pregnancy group and birth asphyxia was 1% in teenage pregnancy as compared with adult-age pregnancy i.e., 2.25%.⁸

Mild anemia was noted in a study of 88% in teenage versus 68% of adult-age pregnancies. Pre-eclampsia was 20% in the teenage group versus 4% in adult-age pregnant and PPH was 2% in teenagers as compared with the adult-age pregnant group i.e., 4%.⁹

A study reported that anemia, pre-eclampsia, and PPH were 24.3%, 0.7%, and 29.9% in teenage pregnancy versus adult-age group i.e., 11.1%, 2.5%, and 5.4%.¹⁰

It was mentioned in a study that severe anemia was 65%, pre-eclampsia was 35.4%, PPH was 23% and birth asphyxia was 9.6% in teenage pregnancies.¹¹

A study revealed that the mean maternal age was 17.49 $\pm$ 0.63 years in teenage pregnancy versus 28.43 $\pm$ 5.64 years in adult-age pregnancy and PPH was 2% in teenage pregnancy and adult-age pregnancy.¹²

Pre-eclampsia was present in 42 patients out of 285 patients in teenage pregnancy versus 224 out of 1241 patients and the p-value was <0.001 (significant) and hemoglobin concentration was 11.29 $\pm$ 1.59 gm/dl in the teenage pregnant group and 11.17 $\pm$ 1.56 gm/dl in adult-age group and p-value was <0.379 .¹³

The mean birth weight of infants in the study and control groups was 2,890 and 2,975 grams respectively. Low birth weight (1,500-2,500 grams) was higher in the study group (14.3% vs 11.9%, $p = 0.003$). Extremely low birth weight (less than 1,500 grams) was higher in the study group (2.6% vs 1.4%, $p = 0.001$).¹⁴

Prevalence of anemia was noted at 63.7% in a study on teenage mothers and PIH was also found at 26.8% in the teenage pregnancy group. The neonatal outcome was very poor in teenage mothers.¹⁴

A study revealed that the mean maternal age was 18.1 $\pm$ 0.93 years, PPH was 9(1.6%) and Birth Asphyxia was 11(12%) in the teenage pregnancy group.¹⁵

It was reported in a study that teenage mothers had higher blood pressure (14.4%) of 140-159/90-109 mm of Hg as compared to adult mothers (6.8%) and the p-value was <0.014 .¹⁶

CONCLUSION

In teenage pregnancy, there are more chances of developing complications such as pre-eclampsia, postpartum hemorrhage (PPH), birth asphyxia, and intrauterine death when compared it to pregnancy in adult age. We have to discourage teenage pregnancy for better health of women and for newborns.

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Conflict of interest

None

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REFERENCES

- Chandra-Mouli V, Camacho AV, Michaud PA. WHO guidelines on preventing early pregnancy and poor reproductive outcomes among adolescents in developing countries. *J Adolesc Health*. 2013 May 1; 52(5):517-22.
- Watcharaseranee N, Pinchantra P, Piyaman S. The incidence and complications of teenage pregnancy at Chonburi Hospital. *J Med Assoc Thai*. 2006 Oct 30; 89(Suppl 4): S118-23.
- Ganchimeg T, Ota E, Morisaki N, Laopaiboon M, Lumbiganon P, Zhang J, et al. Pregnancy and childbirth outcomes among adolescent mothers: A World Health Organization Multicountry Study. *BJOG: An International Journal of Obstetrics & Gynaecology*. 2014 Mar; 121:40-8.
- Areemit R, Thinkhamrop J, Kosuwon P, Kiatchoosakun P, Sutra S, Thepsuthammarat K. Adolescent pregnancy: Thailand's national agenda. *J Med Assoc Thai*. 2012 Jul 1; 95(Suppl 7):134-42.
- Doddihall C, Katti S, Mallapur M. A Profile of Teenage Pregnancies in a Rural Area of Belgaum, Karnataka. *Natl J Community Med*. 2016;7(12):940-2.
- Van Oppenraaij RH, Jauniaux E, Christiansen OB, Horcajadas JA, Farquharson RG, Exalto N. Predicting adverse obstetric outcome after early pregnancy events and complications: a review. *Human reproduction update*. 2009 Jul 1; 15(4):409-421.
- Raatikainen K, Heiskanen N, Verkasalo PK, Heinonen S. Good outcome of teenage pregnancies in high-quality maternity care. *Eur J Public Health*. 2006 Apr 1; 16(2):157-161.
- Kositworakitkun L, Watcharot W, Junlapakee C. Comparison of maternal and neonatal outcomes of teenage versus adult pregnancies at Buddhachinaraj Hospital. *Thai Journal of Obstetrics and Gynaecology*. 2016 Sep 30:169-74.
- Verma P, Vishwakarma S, Khari S. Maternal obstetric complications in teenage pregnancy in Kasturba Hospital, Delhi: A case control study. *Gynaecology Journal*. 2019; 3(6): 150-154.
- Asrat DT, Beloweden EH, Teklay HA, Tesfamaryam LS, Weldemaryam RZ, Tesfamaryam LS et al. Adverse Reproductive Outcomes Associated with Teenage Pregnancy in three Maternity Hospitals in Asmara, Jan 01–Dec 31, 2018 :1-13.
- Jahan E, Alam R. (2021). The obstetric factors and outcome of adolescent pregnancy having IUGR babies. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, 10(6), 2157+. <https://link.gale.com/apps/doc/A666217722/HRC A?u=anon~2417f6bb&sid=googleScholar&xid=aedfa649>
- Abbas AM, Ali SS, Ali MK, Fouly H, Altraigey A. The maternal and neonatal outcomes of teenage pregnancy in a tertiary university hospital in Egypt. *Proceedings in Obstetrics and Gynecology*. 2017 Oct 1;7(3):1-10.
- Naik RR, Cacodkar J, Pednekar GN. Effects of Teenage Pregnancy on Obstetric and Perinatal Outcomes at a Tertiary Health Institution in Goa. *J South Asian Feder Obs Gynae* 2021; 13 (6):363-368.
- Watcharaseranee N, Pinchantra P, Piyaman S. The incidence and complications of teenage pregnancy at Chonburi Hospital. *J Med Assoc Thai*. 2006 Oct 1;89(Suppl 4):S118-23.
- Lawot I, Tamrakar A, Sharma S. Outcomes of Pregnancy among Teenage Mothers: Hospital Based Study in Western Region of Nepal. *IOSR Journal of Nursing and Health Science (IOSR-JNHS)*. 2018; 7(2):47-51.
- Elimmam BG, Abdel-Rahman ME, Saghiron AO. Foetal and maternal pregnancy outcomes among teenage and adult mothers at Omdurman maternity hospital in Sudan. *Khartoum Medical Journal*. 2014 Feb 23; 6(2):881-888.