



COMPARE THE COMPLICATIONS OF PREGNANCY BETWEEN TEENAGE PREGNANCY AND ADULT AGE PREGNANCY

Humaira Tahir^{1*}, Hafsa Rana², Nighat Sultana³, Zill e Huma⁴, Natasha Imtiaz⁵, Sidrah Khan⁶

¹Assistant Professor Gynecology, Liaquat College of Medicine and Dentistry & SESSI Landhi Hospital Karachi Pakistan. Email: humaira24leo@yahoo.com

²Resident Medical Officer Gynecology, SESSI Landhi Hospital Karachi-Pakistan
Email: hafsa92@hotmail.com

³Senior Registrar Gynecology, SESSI Landhi Hospital/Liaquat College of Medicine and Dentistry, Karachi-Pakistan. Email: drnighat19@gmail.com

⁴Resident Medical Officer Gynecology, SESSI Landhi Hospital, Karachi-Pakistan
Email: humariaz295@gmail.com

⁵Resident Medical Officer Gynecology, SESSI Landhi Hospital, Karachi-Pakistan
Email: natashaimtiaz1994@gmail.com

⁶ Medical Student, 4th year MBBS Liaquat College of Medicine and Dentistry, Karachi-Pakistan.
Email: sidrah24khan@gmail.com

***Corresponding Author:** Humaira Tahir

*Assistant Professor Gynecology, Liaquat College of Medicine and Dentistry & SESSI Landhi Hospital Karachi Pakistan. Email: humaira24leo@yahoo.com

Abstract

Background: Teenage pregnancy is very common in lower socioeconomic population. The girls are not educated and due to poverty, they are usually malnourished and associated with different nutritional deficiency problem. Therefore, we addressed this group to see the complications and compare them with old age ladies.

Objective: To explore the complications of pregnancy between teenagers and adult age patients.

Study Design: Observational Comparative study

Place and Duration: This study was carried out in the Department of Obstetrics and Gynecology Sindh Employees Social Security Landhi Hospital, Karachi-Pakistan

Methodology: This study was carried out in the Department of Obstetrics and Gynecology Sindh Employees Social Security Landhi Hospital, Karachi and included 392 pregnant women. They were divided in two equal groups with 196 patients in each group i.e. T-group and A-Group. Teenage pregnancy age ranged from 15 to 19 years and adult age pregnancy from 20 to 35 years. Women who had co-morbid such as diabetes mellitus, hypertension, cardiac, renal and liver diseases were excluded from the study and those patients were also excluded who didn't sign written consent. Convenient sampling technique was used and patients were enrolled for antenatal care from 28 weeks to 40 weeks of pregnancy.

Results: Mean age of teenagers was 16.25 ± 2.46 years and mean age of adult pregnant women was 27.55 ± 6.80 years. Mean gestational age was 30.05 ± 1.5 weeks in teenagers and 38.85 ± 0.68 weeks in adult age pregnancies. Mean BMI was 24.80 ± 4.75 kg/m² in the pregnancy of teenagers and 25.05 ± 4.83 Kg/m² in the adult age pregnancy. Mean concentration of hemoglobin was low in teenagers 9.67 ± 5.98 mg/dl. Preterm deliveries were 14.28% in teenagers and 8.16% in adult age and $p < 0.049$

(S). Number of normal deliveries were higher in both groups. Cesarean section deliveries were 8.67% in teenagers and 5.61% in adult age and p-value was < 0.238 . Anemia, pre-eclampsia, pre term rupture of membrane, pre term labor, low lying placenta, IUGR, postpartum hemorrhage, abnormal presentation, birth asphyxia and neonatal deaths were more in the teenage pregnancy. **Conclusion:** In the Teenage group, pregnancy related complications in mother as well as in newborn were more as compared with adult age pregnancy.

Keywords: Teenage Pregnancy, Birth Asphyxia, Neonatal Death (ND), Intra-uterine Death (IUD), Intra-uterine growth retardation (IUGR).

INTRODUCTION

Teenage pregnancy is a state of fertility in younger girls age ranges from 15 to 19 years. Early marriages resulting early pregnancy and this is becoming an important health issue in many countries of the world (1). More than sixteen million newborn babies delivered in teenagers' pregnant women in the world between the age range 15-19 years. Among them 95% belonged to very poor and low socio-economic countries. First and early pregnancy is very risky for teenagers' mother who are below 16 years of age (2). Teenage mother possesses high risk of maternal as well as neonatal complications including anemia, hypertension, preterm birth, UTI, postpartum Hemorrhage, eclampsia and low birth weight (3). Leading cause of mortality in pregnant females is the pregnancy between the age range from 15-19 years (4). According to WHO teenage pregnancies is a global issue for the developed and developing countries (5). Newborn birth involve in the teenagers is 11% and unfavorable outcomes were 23% in the teenagers (6). Due to complications of teenage pregnancy, most mother were died in poor countries. Due to pregnancy in teenage, education is compromised. Teenage pregnancy has a vicious cycle of poor and ill health and involves in the whole family members such as mother, father, newborn and grand parents too. WHO defined age duration of teenage 10-19 years and teenage is a period from childhood to adulthood (7). Teenage pregnancy is associated with maternal mortality, abortions, unemployment, education drop-outs and carrier opportunities missed (8). Teenage pregnancy itself is a complex of socioeconomic and medical health issues and possess immediate and long-term adverse effects. Approximately 3.9 million unsafe abortions were carried out among teenage girl between the age 15-19 year (9). There is a strong association between increased prevalence of domestic violence and teenage pregnancy. (10)

METHODOLOGY

This observational comparative study was carried out in the Department of Obstetrics and Gynecology, Sindh Employees Social Security Post Graduate Teaching Hospital Landhi after taking informed written consent and written permission from the Institutional Review Board of Social Security Landhi Hospital, Karachi ref. NO.SS/LH/24-25/01.S We enrolled 392 pregnant women for antenatal care. Patients were divided into two groups i.e. T-Group and A-Group. Set age ranges from 15 – 19 years in T-Group and age range from 20 – 30 years in A-Group. One hundred and ninety-six pregnant patients were included in each group respectively. Convenient sampling technique was used for enrollment of patients. All pregnant ladies who had co-morbid such as diabetes mellitus, hypertension, cardiac issues, renal compromised and acute/Chronic liver diseases were excluded from this study. Those patients were also excluded from the study who didn't sign on written consent. Patients were registered for antenatal care from 28 weeks to 40 weeks of pregnancy for parity in both groups. Relevant history was taken and physical examination was performed. Findings were recorded on antenatal card. Routine investigations such as CBC, urine D/R, Random and fasting blood sugar, viral markers and obstetrical ultrasound were advised in the 1st visit and documented. Routine antenatal checkup continued till the term. Complications related to pregnancies were noted. For continuous variables percentages calculated and for categorical variables chi square test applied, p values set < 0.5 for significance. For statistical analysis data were entered in SPSS software version 25.

RESULTS:

Preterm deliveries were 8.16% in adult age pregnancy and 14.28% in teenage pregnancy and $p < 0.049$ (Significant). In T-Group, normal deliveries were 61.73% and in A-Group it was 72.95%. Primary education level was higher in teenagers while secondary and higher education was compromised in teenager due to early pregnancy (figure 1). Caesarean section rate was high in the teenage pregnancy (T-Group) 8.67% as compared to adult age group 5.61% and p-value was insignificant i.e. $p < 0.238$ (Table- 2). Abnormal presentation, IUGR, low lying placenta, Pre-eclampsia, pre term rupture of membranes and PPH were more in the T-Group as compared with the A-Group. Birth asphyxia, NND (neonatal death) and IUD were also more in the T-Group. In the teenage pregnancy group, LBW (low birth weight) of newborn was higher. Good birth weight was noted in higher number of patients in the adult age pregnancy (Table 4). Mean age of mothers was 16.25 ± 2.46 years in the T-Group and 27.55 ± 6.8 years in the adult age group. Mean BMI was 24.80 ± 4.75 kg/m² in teenagers' group while in adult age pregnancy it was 25.05 ± 4.83 Kg/m². At time of delivery mean gestational age was 30.05 ± 1.5 weeks in teenagers' group and 38.85 ± 0.68 weeks in the adult age group. Mean concentration of hemoglobin was 9.79 ± 5.98 mg/dl in teenagers' group while it was 13.03 ± 5.75 mg/dl in the adult age pregnancy group (Table-1)

Table 1: Comparison of mean maternal age, B.M.I, hemoglobin conc. and gestational age between teenage and adult age pregnancy.

Variables	(T-Group) Teenage pregnancy (n = 196)	(A-Group) Adult age pregnancy (n = 196)
Mean maternal age (in years)	16.25 ± 2.46	27.55 ± 6.80
Mean B.M.I. (in Kg/m ²)	24.80 ± 4.75	25.05 ± 4.83
Hemoglobin (mg/dl)	9.67 ± 5.98	13.03 ± 5.75
Mean gestational age (in weeks)	30.05 ± 1.5	38.85 ± 0.68

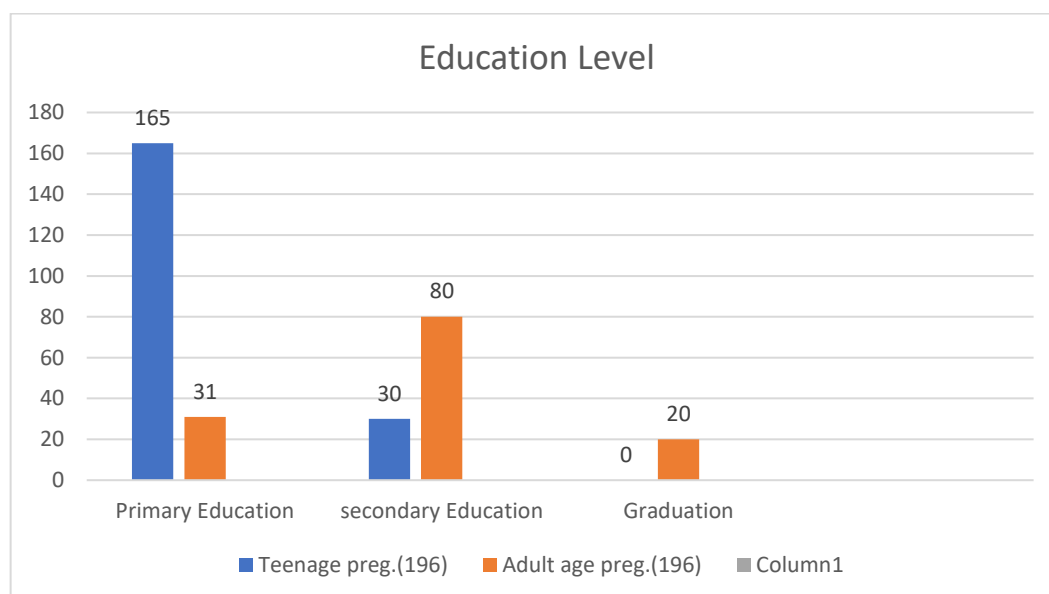


Figure 1: Educational status in teenage and adult age pregnancy.

Table 2: Mode of Deliveries in Teenage and Adult age pregnancy.

Variables	(T-Group) Teenage pregnancy (n = 196)	(A-Group) Adult age pregnancy (n = 196)	p-value
Preterm Delivery	28(14.28%)	16(8.16%)	0.049
Normal Vaginal Delivery	121(61.73%)	143(72.95%)	0.014
Instrumental Delivery	30(15.30%)	26(13.26%)	0.548
C-Section Delivery	17(8.67%)	11(5.61%)	0.238

Chi square test applied

Table 3: Comparison of different variables between teenage and adult age pregnancy.

Variables	(T-Group) Teenage pregnancy (n = 196)	(A-Group) Adult age pregnancy (n = 196)	p-value
Abnormal Presentation	14 (8.28%)	8 (4.08%)	0.143
Low Lying Placenta	13 (6.63%)	6 (3.06%)	0.073
I.U.G.R.	19 (9.69%)	10 (5.10)	0.033
Pre-Eclampsia	17 (8.67%)	6 (3.06%)	0.016
Pre Term Rupture of Membrane	29 (14.79%)	15 (7.65%)	0.021
Post-partum Hemorrhage	61(31.12%)	18 (9.18%)	0.015

Chi square test applied

Table 4: Comparison of birth asphyxia, perinatal death and birth weight of newborn between teenage pregnancy and ideal age pregnancy

Variables	(T-Group) Teenage pregnancy (n = 196)	(A-Group) Adult age pregnancy (n = 196)	p-value
Birth asphyxia	94 (47.95%)	33 (16.83%)	0.019
Perinatal Death			
I.U.D.	13 (6.63%)	6 (3.06%)	0.095
N.N.D	19 (9.69)	13 (6.63%)	0.263
Birth weight of Newborn (in Kg.)			
Less than 2 Kg.	12 (6.12%)	11 (5.61%)	0.856
B/W 2 - 2.8 Kg.	75 (38.26%)	64 (32.65%)	0.045
More than 2.8 Kg.	10 (5.10)	22 (11.22%)	0.002

Chi square test applied

DISCUSSION

Result of current study shows that Mean age of mothers was 16.25 ± 2.46 years in the teenage pregnancy and 27.55 ± 6.8 years in the adult age pregnancy group. Mean gestational age was 30.05 ± 1.5 weeks in teenagers' group and 38.85 ± 0.68 weeks in the adult age group. Mean BMI was 24.80

± 4.75 kg/m² in teenagers' group while in adult age pregnancy it was 25.05 ± 4.83 Kg/m². Normal deliveries were higher 72.95% in adult age pregnancy and low 61.73% in teenage pregnancy. Caesarean sections, Abnormal presentation, IUGR, low lying placenta, Pre-eclampsia, pre term rupture of membranes and PPH, Birth asphyxia, NND (neonatal death) and IUD rates were high in the teenage pregnancy (T-Group) as compared to adult age group. LBW (low birth weight) of newborn was higher in the teenage pregnancy and good birth weight was higher in the adult age pregnancy. Anemia was higher in teenagers' group and education was also compromised in teenage pregnancy. In a study mean age of teenage mother was 17 ± 1.53 years and 30 ± 6.57 years in adult age pregnancy. In teenage pregnancy preterm delivery and LBW were higher i.e. 496 (91.9%) and 478 (88.55%) (11), correlating with our study. In a study it was reported that mean maternal age was 17.49 ± 0.63 years in teenagers' group and 28.43 ± 5.64 years in adult age pregnancy and post-partum hemorrhage (PPH) was observed 2% in both groups (12) while in our study PPH was significantly higher in teenage pregnancy 31.12% and p-value was 0.015. In another study it was revealed that cesarean sections rate was higher in adult age pregnancy as compared with teenage pregnancy while in our study cesarean sections were higher in teenagers and deferring from that study (13). In a study anemia was reported 23 (16.42%) in teenagers pregnancy group and 12 (8.57%) in adult age pregnancy while in our study anemia was also more in teenagers' group and this study is correlating with current study. Normal deliveries were 50.71% in teenagers' pregnancy and 77.85% in adult age pregnancy and p-value was significant i.e. $p < 0.001$. Instrumental deliveries were 2.85% in teenage pregnancy 1.42% in adult age pregnancy and p-value was insignificant ($p = 0.684$). Cesarean sections were 33.57% in teenage pregnancy and 15.71% in adult age pregnancy and p-value was significant i.e. $p < 0.001$. I.U.G.R was 5.71% in teenage pregnancy and 1.42% in adult age pregnancy and p-value was 0.05. Low birth weight was more in teenagers 16.42% and in adult pregnancy it was 8.57% and p-value was 0.047 (significant) (14). Teenagers had compromised their education due to early pregnancy. Teenagers pregnant had lower rate of cesarean section as compared to adult age pregnant and IUGR and Low birth weight was higher in teenagers, p-value was < 0.01 (15). In a study mean age of teenager was 17.32 ± 0.95 years and 26.11 ± 3.19 years in adult age group. Pre-eclampsia was significantly higher in adult age pregnancy as compared with teenage pregnancy (3.4% versus 1.3%, $p < 0.001$). preterm rupture of membrane and IUGR were higher in teenagers' group (16) and correlating with our study. Teenagers pregnant had lower education than adult age pregnant, education period < 6 years (6.1% versus 1.8%) and 7-9 years (62.2% versus 34.3%) and p-value was $p < 0.001$ (significant). Birth weight of newborn was lower in teenage pregnancy as compared with adult age pregnant (3204 ± 509 gm versus 3344 ± 491 gm and $p < 0.001$). Anemia was lower in teenage pregnancy (17) and in our study anemia were higher in teenagers. In a study it was reported that teenage pregnancy had higher risks of adverse pregnancy outcomes. Incidence of pre-eclampsia and eclampsia was higher in teenage pregnancy as well as maternal mortality was also higher. Cesarean section rate was higher in adult age pregnancy. In teenage pregnancy, post-partum hemorrhage (PPH) and preterm rupture of membrane was also higher in teenagers' group (18). In a study anemia was reported 39.8% in teenage pregnancy and 43.1% in adult age pregnancy, p-value was insignificant ($p = 0.491$) while in our study anemia was more in teenage pregnancy. Cesarean section was (54.2%) in adult age pregnancy and (45.8%) in teenage pregnancy and p-value was insignificant ($p = 0.225$). Normal deliveries were more in teenager i.e. 53.2%, instrument deliveries were 0.5% in teenagers and null in adult age pregnancy. Birth asphyxia was 10.6% in teenage group and 8.8% in adult age group. Low birth weight of newborn was 24.5% in teenagers and 19.9% in adult age (19). In a study normal deliveries were higher in teenage pregnancy i.e. 84% and 58.5% in adult age pregnancy, p-value was $p < 0.001$, cesarean sections were more in adult age pregnancy i.e. 41.5% (20). Anemia was 23% in teenagers and 6.1% in adult age pregnant. Preterm rupture of membrane was 11.5% in teenagers and 7.4 % in adult age group (21). In another study pre-eclampsia was 12% in teenage pregnancy and 9% in adult age pregnancy. Anemia was 11% in teenage and 3% in adult age pregnant, p-value was significant ($p < 0.001$). Gestational age less than 36 weeks was 7% in teenage and 3% in adult age pregnancy, gestational age 37-40 weeks was 59% in teenagers versus 67% in adult ag pregnant and $p < 0.017$ (significant). Newborn baby weight < 2500 gm. was 27% in teenage pregnancy and 6% in adult age.

Newborn weight 2500 4000 gm. Was 70% in teenagers and 82% in adult age pregnancy and p-value was $p<0.0001$. (22) In a study teenage mother had lower level of education and $p<0.001$. Newborn weight was significantly lower in teenage pregnancy as compared to adult age pregnancy and p-value was $p<0.001$ (23). In a study cesarean section was 12.9% in teenagers versus 18.8% in adult age pregnant women. Instrumental deliveries were done in 8.4% in teenagers and 8.8% in adult age pregnancy. Post-partum hemorrhage was noted 12% in teenagers and 17% in adult age pregnancy (24). Low birth weight (LBW) of newborn was higher in teenagers' group (74.4%) and in adult age pregnant it was (67.2%) and teenagers are at greater risk for anemia (25).

CONCLUSION

Significant differences were observed between Teenage and adult age pregnancy for mean maternal age, gestational age, hemoglobin concentration, postpartum hemorrhage, birth asphyxia and birth weight of newborn (2-2.8 kg and above 2.8 kg). A lot of risks and complications seen in teenagers' pregnancy as compared with the adult age pregnancy. Result of this study pointing a message to our community to avoid marriages and pregnancies in teenager for better health.

Authors Contribution:

Humaira Tahir =	Conceptualization
Hafsa Rana=	Study Design
Nighat Sultana=	Methodology, Data Analysis and interpretation
Zill e Huma=	Critical review and revision
Natasha Imtiaz=	Methodology. Data Analysis and interpretation
Sidrah Khan=	Writing Draft

Funding source: All patients secured by Sindh Employees's Social Security Institution.

Conflict of interest: Declared none

Ethical Permission: Permission was taken from the institutional review board committee Ref. No. SS/LH/IRB/2023-24/01

ACKNOWLEDGEMENTS: Declared none.

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