

# Prevalence of Teenage Pregnancy & Its Outcome at Shaikh Zaid Women Hospital Larkana

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## ABSTRACT

**Background:** Teenage adolescent pregnancy is an important community health issue globally. Research shows that mothers in teenage period are at a higher risk of maternal death and complications related with pregnancy in comparison to the mothers who are adult. Therefore, this research was directed to examine the sociodemographic profile and fetal and maternal outcomes related with teenage pregnancy and their comparison with mothers of 20-30 years of age.

**Study Design:** A comparative cross-sectional study.

**Place and Duration:** In the obstetrics and Gynecology department of Sheikh Zaid Women Hospital Larkana for one-year duration from March 2021 to February 2022.

**Methods:** A total of 60 teenage mothers  $\leq 19$  and 60 mothers who were 20-30 years of age respectively, were nominated as controls and cases. Data on the obstetric complications, fetal outcomes and sociodemographic profile were collected through face-to-face interviews using a pre-tested, pre-designed, partially structured questionnaire. The statistics were analyzed by entering data in the excel sheet of Microsoft.

**Results:** In this study, 18.1 years was the mean age in teenage pregnant females and 24.3 years in the control group. 17.8 years was the mean age at which teenage mothers were married and for adults it was 20.1 years. 66.7% of teenage mothers and 61.7% of the control group are of high-low socioeconomic status. 80% of teenage pregnant females and 75% of control group were from rural areas. The mainstream of teenage mothers (70%) and control mothers (58.3%) are housewives by profession. The consanguineous marriages were observed in 33.3% of adolescent pregnant females and 41.7% in the control group. In this study, 38.3% and 46.7% of the mothers in adolescent and control group respectively had ante-natal checks during their pregnancy. Stillbirth / miscarriage were reported in 13.3% of adolescent mothers and 25% in the control group. 63.3% of teenage mothers had mild anemia and 53.3% in controls. The incidence of malnutrition (40% vs 15%,  $p < 0.05$ ), PPH (25% vs 6.7%,  $p < 0.05$ ), PROM (20% vs 3.3%,  $p < 0.05$ ) was significant in teenage mothers in comparison to mothers who were adults. The incidence of PIH was lower significantly in mothers during adolescence in comparison to adult mothers (13.3% vs. 31.7%,  $p < 0.05$ ).

**Conclusions:** Complications such as PROM, maternal malnutrition, premature delivery, PPH and low birth weight occurred more frequently in adolescent mothers than in mothers who were adults. The adult mother's higher proportion of PIH than in teenage mothers.

**Keywords:** Adult pregnancy, teenage pregnancy, sociodemographic factors, adverse fetal and maternal outcomes.

## INTRODUCTION

"Adolescence" is the intermediate stage of mental development and physical growth between childhood and maturity that involves fluctuations in mental, biological and social health<sup>1-2</sup>. The WHO has describes this stage as the ages of 10 and 19 and is also synonymous with "Teenage". Any kind of stress that a child experiences at this stage in life can make it difficult for a child to successfully transformation to the healthy adults<sup>3-4</sup>. Gestation at this stage can be tense for an adolescent as she is not mentally and physically enough mature to meet the pregnancy demands. Adults or teenage gravidness has transformed to be a significant public and social health issue all over the world, and much precisely in under developed states<sup>5-6</sup>. It is assessed that up to 1.6 billion girls with 15-20 years give birth every year in under developed states like India and Pakistan. While most young mothers in developed countries are single women, teenage pregnancy is a societal obstacle due to insufficient contraception knowledge and sexual education; teenage mothers in under developed states are frequently married at their early teenage and their pregnancies are greeted by the society and family<sup>7-8</sup>. This is because of deeply entrenched traditions and customs that support child marriage in developing countries such as Pakistan and India<sup>9-10</sup>. Various studies have found that there are numerous motherly problems related with teenage gestation. This increases the global problem of disease from childbirth and pregnancy. Premature childbirth is not solitary related with adversative motherly consequences such as anemia, preterm labor, PROM, PIH, STDs, UTI, mental illness, abortion, postpartum sepsis and postpartum

hemorrhage (PPH) and adverse effects on the fetus such as preterm labor, stillbirth, asphyxia, LBW infants, birth trauma and RDS<sup>11</sup>. Therefore, this study was directed to examine the sociodemographic profile and fetal and maternal outcomes related with teenage pregnancy and their comparison with mothers of 20-30 years of age.

## METHODS

This cross-sectional comparative study was held in the Obstetrics and Gynecology department of Sheikh Zaid Women Hospital Larkana for one-year duration from March 2021 to February 2022. A total of 60 teenage mothers  $\leq 19$  and 60 mothers who were 20-30 years of age respectively, were nominated as controls and cases. Mothers who agreed to participate in the study; mothers in cases group were age of  $\leq 19$  years and in control group mothers of 20-30 years were included. Females who did not want to contribute in the analysis; females over 30; Existence of significant previous surgical or medical conditions that might disturb the results of the pregnancy.

Data on the obstetric complications, fetal outcomes and sociodemographic profile were collected through face-to-face interviews using a pre-tested, pre-designed, partially structured questionnaire. The questionnaire included data on fetal and obstetric outcomes, sociodemographic details and any obstetrical problem that happened in the intra-natal, prenatal or postnatal periods. Laboratory data was collected from the relevant hospital records of the participants. Informed consent was attained from

selected participants prior to study initiation. Prior to the start of the study, approval was obtained from the Ethical committee.

The comparison of questionnaire responses was done using the standard and mean error of the variance between the proportions and the results proportions were compared with chi-square test. Two-sided  $p < 0.05$  was applied to specify statistical implication. The statistics were analyzed by entering data in the excel sheet of Microsoft and categorical variables are articulated as a percentage.

### RESULTS

In this study, 18.1 years was the mean age in teenage pregnant females and 24.3 years in the control group. 17.8 years was the mean age at which teenage mothers were married and for adults it was 20.1 years. Table-I shows the mothers socio-demographic status of both studied groups. 66.7% of teenage mothers and 61.7% of the control group are of high-low socioeconomic status. 80% of teenage pregnant females and 75% of control group were from rural areas. The mainstream of teenage mothers (70%) and control mothers (58.3%) are housewives by profession. In this study, in both study groups, 100% coverage was observed in the prevention of iron and folic acid deficiency and all were immunized with tetanus toxoid. Table-II shows the study population distributions conferring to the obstetric history.

Table-1: shows the patients Socio-demographic profile

| S. No | Characteristics      | Adolescent group (≤19 years) | Control Group (20-30 years) |
|-------|----------------------|------------------------------|-----------------------------|
| 1     | Mean Age             | 18.1 Years                   | 24.3 years                  |
|       | Mean Age of Marriage | 17.8 years                   | 20.1 years                  |
| 2     | Income               |                              |                             |
|       | Upper lower          | 40 (66.7)                    | 37 (61.7)                   |
|       | Lower middle         | 13 (21.6)                    | 20 (33.3)                   |
|       | Upper middle         | 7 (11.7)                     | 3 (5)                       |
| 3     | Residential area     |                              |                             |
|       | Rural                | 48 (80)                      | 45 (75)                     |
|       | Urban                | 12 (20)                      | 15 (25)                     |
| 5     | Education            |                              |                             |
|       | Illiterate           | 23 (38.3)                    | 15 (25)                     |
|       | Primary              | 16 (26.7)                    | 20 (33.3)                   |
|       | Secondary            | 18 (30)                      | 17 (28.4)                   |
|       | Intermediate         | 3 (5)                        | 2 (3.3)                     |
|       | Degree and above     | Nil                          | 6 (10)                      |
| 6     | Occupation           |                              |                             |
|       | Housewife            | 42 (70)                      | 35 (58.3)                   |
|       | Labourer             | 18 (30)                      | 19 (31.7)                   |
|       | Professional         | Nil                          | 6 (10)                      |
| 7     | Husband education    |                              |                             |
|       | Illiterate           | 12 (24)                      | 16 (32)                     |
|       | Primary              | 15 (30)                      | 10 (20)                     |
|       | Secondary            | 11 (22)                      | 20 (40)                     |
|       | Intermediate         | 6 (12)                       | 4 (8)                       |
|       | Degree and above     | 6 (12)                       | Nil                         |

As can be seen in Table-II, consanguineous marriages were observed in 33.3% of adolescent pregnant females and 41.7% in the control group. In this study, 38.3% and 46.7% of the mothers in adolescent and control group had ante-natal checks during their pregnancy. Stillbirth / miscarriage were reported in 13.3% of adolescent mothers and 25% in the control group.

Table-2: shows the patients distribution conferring to obstetric history

| S. No | Characteristics | Adolescent group (≤19 years) | Control Group (20-30 years) |
|-------|-----------------|------------------------------|-----------------------------|
| 1     | Gravida         |                              |                             |
|       | Primigravida    | 44 (73.3)                    | 30 (50)                     |
|       | Gravida 2       | 12 (20)                      | 21 (35)                     |
|       | Gravida 3       | 4 (6.7)                      | 6 (10)                      |
|       | Gravida 4       | Nil                          | 3 (5)                       |
| 2     | Consanguinity   |                              |                             |
|       | Present         | 20 (33.3)                    | 25 (41.7)                   |

|   |  |           |           |
|---|--|-----------|-----------|
|   | Absent   | 40 (66.7) | 35 (58.3) |
| 3 | Regular antenatal check-ups                    |           |           |
|   | Yes  | 23 (38.3) | 28 (46.7) |
|   | No   | 37 (61.7) | 32 (53.3) |
| 4 | Previous history of still births and abortions |           |           |
|   | Present 8 (13.3)                               |           | 15 (25)   |
|   | Absent 52 (86.7)                               |           | 45 (75)   |

The hemoglobin  $> 10\text{gm}\%$  were seen in only 6.7% of teenage mothers and control group. 63.3% of teenage mothers had mild anemia and 53.3% in controls. Similarly, 30% of teenage mothers had moderate anemia and 31.7% in the control group, while severe anemia was found only in the control group (8.3%).

Table-3: shows the study population distributions by obstetric complications

| S. No | Characteristics  | Adolescent group (≤19 years) | Control Group (20-30 years) | P-Value |
|-------|--|------------------------------|-----------------------------|---------|
| 1     | Hb%  |                              |                             |         |
|       | $> 10\text{ gm}\%$   | 4 (6.7)                      | 4 (6.7)                     |         |
|       | 8 - 10 gm% (Mild anemia)                                     | 38 (63.3)                    | 32 (53.3)                   | $>0.05$ |
|       | 6.5 - 8 gm% (Moderate)                                       | 18 (30)                      | 19 (31.7)                   |         |
|       | $<6.5\text{ gm}\%$ (Severe)                                  | Nil                          | 5 (8.3)                     |         |
| 2     | Body mass index (Nutritional status)                         |                              |                             |         |
|       | Under-nutrition (BMI $<18.5\text{ kg/m}^2$ ) 24 (40)         |                              | 9 (15)                      |         |
|       | Normal (BMI $18.5 - 25\text{ kg/m}^2$ ) <sup>34 (56.7)</sup> |                              | 43 (71.7)                   | $<0.05$ |
|       | Obese (BMI $>25\text{ kg/m}^2$ ) <sup>2 (3.3)</sup>          |                              | 8 (13.3)                    |         |
| 3     | Pregnancy induced hypertension (PIH)                         |                              |                             |         |
|       | Present 8 (13.3)   |                              | 19 (31.7)                   | $<0.05$ |
|       | Absent 52 (86.7)   |                              | 41 (68.3)                   |         |
| 4     | Premature rupture of membranes (PROM)                        |                              |                             |         |
|       | Present 12 (20)  |                              | 2 (3.3)                     | $<0.05$ |
|       | Absent 48 (80)   |                              | 58 (96.7)                   |         |
| 5     | Postpartum hemorrhage (PPH)                                  |                              |                             |         |
|       | Present 15 (25)  |                              | 4 (6.7)                     | $<0.05$ |
|       | Absent 45 (75)   |                              | 56 (93.3)                   |         |

As shown in Table 3, the incidence of malnutrition (40% vs 15%,  $p < 0.05$ ), PPH (25% vs 6.7%,  $p < 0.05$ ), PROM (20% vs 3.3%,  $p < 0.05$ ) was significant in teenage mothers in comparison to mothers who were adults. The incidence of PIH was lower significantly in mothers during adolescence in comparison to adult mothers (13.3% vs. 31.7%,  $p < 0.05$ ).

Table-4: shows the study population distributions conferring to the pregnancy outcomes

| S. No | Characteristics                | Adolescent group (≤19 years) | Control Group (20-30 years) | P-Value |
|-------|--------------------------------|------------------------------|-----------------------------|---------|
| 1     | Type of delivery               |                              |                             |         |
|       | Normal                         | 50 (83.3)                    | 42 (70)                     |         |
|       | Abnormal (assisted/ caesarean) | 10 (16.7)                    | 18 (30)                     | $>0.05$ |
| 2     | Termination of pregnancy       |                              |                             |         |
|       | Pre-term                       | 22 (36.7)                    | 13 (21.7)                   | $>0.05$ |
|       | Term                           | 38 (63.3)                    | 47 (78.3)                   |         |
| 3     | Birth weight of baby           |                              |                             |         |
|       | Normal weight                  | 37 (61.7)                    | 46 (76.7)                   | $>0.05$ |
|       | Low birth weight               | 23 (38.3)                    | 14 (23.3)                   |         |

### DISCUSSION

We assessed the sociodemographic profile, fetal and maternal outcomes of teenage mothers and their comparison with 20-30 years of age group mothers in this analysis. In this study, 18.1 years was the mean age in teenage pregnant females and 24.3 years in the control group. 17.8 years was the mean age at which

teenage mothers were married and for adults it was 20.1 years. 66.7% of teenage mothers and 61.7% of the control group are of high-low socioeconomic status. In a Nessay et al study of Bangladesh, 71% of the surveyed populace were from the lowest income group<sup>12-13</sup>. In our study, 80% of teenage pregnant females and 75% of control group were from rural areas. Comparable to this study results, Dutt et al. Most of the surveyed population (98%) came from the rural areas<sup>14-15</sup>. The illiteracy rate was 38.3% in teenage mothers and 25% in adult mothers. A Dutt et al study in southern India, 53.5% was the illiteracy rate in teenage pregnant females and 8.2% in adult pregnant females<sup>16</sup>. The mainstream of teenage mothers (70%) and control mothers (58.3%) are housewives by profession comparable to the Doddihai et al study in Belgium it was found that 90.3% of young mothers were housewives<sup>17-18</sup>.

In this analysis, consanguineous marriages were observed in 33.3% of adolescent pregnant females and 41.7% in the control group. These results can be compared with the study by Doddihai et al. in Belgium with an incidence of 36%<sup>19</sup>. In this study, 38.3% and 46.7% of the mothers in adolescent and control group had ante-natal checks during their pregnancy. In Dutty et al study, solitary 62.50% of teenage pregnant females and 94.2% of adult pregnant females were registered for ante-natal visits<sup>20-21</sup>. In this study, 63.3% of teenage mothers had mild anemia and 53.3% in controls. This number was much higher than in the study by Nessa et al study in Bangladesh (48%). In this study, the incidence of malnutrition (40% vs 15%,  $p < 0.05$ ), PPH (25% vs 6.7%,  $p < 0.05$ ), PROM (20% vs 3.3%,  $p < 0.05$ ) was significant in teenage mothers in comparison to mothers who were adults. Comparable results were seen in Talawar et al study in India and in Madhya Pradesh et al and Yasmin et al study<sup>22</sup>.

This study found that the preterm birth rate was advanced in teenage females with pregnancy in comparison to adult females with pregnancy, but this change was statistically significant (36.7% vs. 21.7%,  $p > 0.05$ ). Moreover, the frequency of low-birth-weight neonates was numerically greater in teenage pregnant females in comparison to adult pregnant females, but the change was not statistically significant (38.3% vs 23.3%,  $p > 0.05$ ). These findings were similar to many other studies in the Rudra et al in Pune, United States by Chen et al, Ganchimeg et al and Derme et al in Rome<sup>23-25</sup>.

## CONCLUSION

Complications such as PROM, maternal malnutrition, premature delivery, PPH and low birth weight occurred more frequently in adolescent mothers than in mothers who were adults. The adult mother's higher proportion of PIH than in teenage mothers. This can be due to multigravida, earlier pregnancy in adolescence and closely spaced pregnancies. Teenage gestation is the significant community health concerns. The healthcare professional should view pregnancy at teenage as "high risk" and edify expecting teens to register early and undergo consistent ante-natal checks to allow early treatment and detection of possible difficulties. The psychological support and nutritional counselling should also be given to support teenage mothers cope with the pregnancy stresses. Above all, a girl's education has a vital role in delaying the age of marriage and childbearing, thus protecting her from the risk of pregnancy at an early age.

## REFERENCES

- Pribenszky C, Nilselid AM, Montag M. Time-lapse culture with morphokinetic embryo selection improves pregnancy and live birth chances and reduces early pregnancy loss: a meta-analysis. *Reproductive biomedicine online*. 2017 Nov 1;35(5):511-20.
- Hotz VJ, McElroy SW, Sanders SG. The impacts of teenage childbearing on the mothers and the consequences of those impacts for government. *InKids having kids* 2018 Aug 9 (pp. 55-94). Routledge.
- Coomarasamy A, Devall AJ, Cheed V, Harb H, Middleton LJ, Gallos ID, Williams H, Eapen AK, Roberts T, Ogwulu CC, Goranitis I. A randomized trial of progesterone in women with bleeding in early pregnancy. *New England Journal of Medicine*. 2019 May 9;380(19):1815-24.
- Kaphagawani NC, Kalipeni E. Sociocultural factors contributing to teenage pregnancy in Zomba district, Malawi. *Global public health*. 2017 Jun 3;12(6):694-710.
- Neupane N, Bhandari P, Kaple HP. Factors associated with teenage pregnancy: a case control study. *Journal of Health and Allied Sciences*. 2019 Dec 8;9(1):21-7.
- Bearak J, Popinchalk A, Alkema L, Sedgh G. Global, regional, and subregional trends in unintended pregnancy and its outcomes from 1990 to 2014: estimates from a Bayesian hierarchical model. *The Lancet Global Health*. 2018 Apr 1;6(4):e380-9.
- Saraswat L, Ayansina DT, Cooper KG, Bhattacharya S, Miligkos D, Horne AW, Bhattacharya S. Pregnancy outcomes in women with endometriosis: a national record linkage study. *BJOG: An International Journal of Obstetrics & Gynaecology*. 2017 Feb;124(3):444-52.
- Kassa GM, Arowojolu AO, Odukogbe AA, Yalew AW. Prevalence and determinants of adolescent pregnancy in Africa: a systematic review and meta-analysis. *Reproductive health*. 2018 Dec;15(1):1-7.
- Murphy HR, Bell R, Cartwright C, Curnow P, Maresh M, Morgan M, Sylvester C, Young B, Lewis-Barned N. Improved pregnancy outcomes in women with type 1 and type 2 diabetes but substantial clinic-to-clinic variations: a prospective nationwide study. *Diabetologia*. 2017 Sep;60(9):1668-77.
- Schreiber CA, Creinin MD, Atrio J, Sonalkar S, Ratcliffe SJ, Barnhart KT. Mifepristone pretreatment for the medical management of early pregnancy loss. *New England Journal of Medicine*. 2018 Jun 7;378(23):2161-70.
- Hofmeyr GJ, Betrán AP, Singata-Madliki M, Cormick G, Munjanja SP, Fawcus S, Mose S, Hall D, Ciganda A, Seuc AH, Lawrie TA. Prepregnancy and early pregnancy calcium supplementation among women at high risk of pre-eclampsia: a multicentre, double-blind, randomised, placebo-controlled trial. *The Lancet*. 2019 Jan 26;393(10169):330-9.
- Catalano PM, Shankar K. Obesity and pregnancy: mechanisms of short term and long term adverse consequences for mother and child. *Bmj*. 2017 Feb 8;356.
- Leftwich HK, Alves MV. Adolescent pregnancy. *Pediatric Clinics*. 2017 Apr 1;64(2):381-8.
- Leung H, Shek DT, Leung E, Shek EY. Development of contextually-relevant sexuality education: Lessons from a comprehensive review of adolescent sexuality education across cultures. *International journal of environmental research and public health*. 2019 Feb;16(4):621.
- Denney L, Gordon R, Kamara A, Lebby P. Change the context not the girls: A critical analysis of efforts to reduce teenage pregnancy in Sierra Leone. *J. Res. Gender Stud.* 2017;7:11.
- Pinar MH, Gibbins K, He M, Kostadinov S, Silver R. Early pregnancy losses: review of nomenclature, histopathology, and possible etiologies. *Fetal and pediatric pathology*. 2018 May 4;37(3):191-209.
- Shen M, Smith GN, Rodger M, White RR, Walker MC, Wen SW. Comparison of risk factors and outcomes of gestational hypertension and pre-eclampsia. *PloS one*. 2017 Apr 24;12(4):e0175914.
- Koletzko B, Godfrey KM, Poston L, Szajewska H, Van Goudoever JB, De Waard M, Brands B, Grivell RM, Deussen AR, Dodd JM, Patro-Golab B. Nutrition during pregnancy, lactation and early childhood and its implications for maternal and long-term child health: the early nutrition project recommendations. *Annals of Nutrition and Metabolism*. 2019;74(2):93-106.
- Persson M, Cnattingius S, Villamor E, Söderling J, Pasternak B, Stephansson O, Neovius M. Risk of major congenital malformations in relation to maternal overweight and obesity severity: cohort study of 1.2 million singletons. *bmj*. 2017 Jun 14;357.
- Nilsson C, Hessman E, Sjöblom H, Dencker A, Jangsten E, Mollberg M, Patel H, Sparud-Lundin C, Wigert H, Begley C. Definitions, measurements and prevalence of fear of childbirth: a systematic review. *BMC pregnancy and childbirth*. 2018 Dec;18(1):1-5.
- Nazarpour S, Ramezani Tehrani F, Simbar M, Tohidi M, Alavi Majid H, Azizi F. Effects of levothyroxine treatment on pregnancy outcomes in pregnant women with autoimmune thyroid disease. *Eur J Endocrinol*. 2017 Feb 1;176(2):253-65.
- Patton GC, Olsson CA, Skirbekk V, Saffery R, Wlodek ME, Azzopardi PS, Stonawski M, Rasmussen B, Spry E, Francis K, Bhutta ZA. Adolescence and the next generation. *Nature*. 2018 Feb;554(7693):458-66.
- Hamburg BA. Subsets of adolescent mothers: Developmental, biomedical, and psychosocial issues. *InSchool-Age Pregnancy & Parenthood* 2017 Jul 28 (pp. 115-146). Routledge.
- Stephen G, Mgongo M, Hussein Hashim T, Katanga J, Stray-Pedersen B, Msuya SE. Anaemia in pregnancy: prevalence, risk factors, and adverse perinatal outcomes in Northern Tanzania. *Anemia*. 2018 May 2;2018.
- Mohamed EA, Hamed AF, Yousef F, Ahmed EA. Prevalence, determinants, and outcomes of unintended pregnancy in Sohag district, Egypt. *Journal of the Egyptian Public Health Association*. 2019 Dec;94(1):1-9.