

COMPARISON OF OBSTETRIC OUTCOMES BETWEEN TEENAGE AND NON-TEENAGE PREGNANCIES AT A TERTIARY CARE HOSPITAL IN PESHAWAR

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Abstract

Background:

Teenage pregnancy remains an important public health concern worldwide, particularly in regions such as Khyber Pakhtunkhwa (KP), Pakistan, where sociocultural and socioeconomic factors may contribute to early marriage and subsequent childbearing. Despite ongoing efforts to address adolescent pregnancy, limited evidence is available regarding its obstetric outcomes in this region.

Objective

To compare obstetric outcomes and maternal and neonatal complications among teenage mothers aged 14–18 years and non-teenage mothers aged 19–36 years in peshawar Khyber Pakhtunkhwa, Pakistan.

Study Design

Retrospective comparative study.

Place and Duration of Study

Department of Gynecology, tertiary Hospitals, peshawar, Khyber Pakhtunkhwa, Pakistan, from march , 2025, to november, 2025

Materials and Methods

A retrospective comparative study was conducted among women who delivered at the study hospital during the study period. Teenage mothers aged 14–18 years were compared with non-teenage mothers aged 19–36 years. Maternal and neonatal obstetric outcomes were assessed using available medical records. Categorical variables were analyzed using the chi-square test, while continuous variables were compared using Student's t-test. A p-value of <0.05 was considered statistically significant.

Results

Among 910 deliveries, 128 (14.1%) were among non-teenage mothers, while the remaining deliveries were among teenage mothers. Teenage mothers had higher frequencies of severe anemia (7.5% vs. 4.1%), chorioamnionitis (2.6% vs. 0.6%), post-term pregnancy (4.6% vs. 1.8%),

and meconium aspiration syndrome (6.5% vs. 2.4%) compared with non-teenage mothers. Teenage mothers were less likely to be overweight than non-teenage mothers. Instrumental delivery was significantly more frequent among teenage mothers (7.1% vs. 2.2%, $p=0.01$). No statistically significant differences were observed between the groups regarding preterm birth, low birth weight, respiratory distress syndrome, neonatal mortality, or fetal mortality.

Conclusion

Teenage pregnancy was associated with a higher frequency of severe anemia, chorioamnionitis, post-term pregnancy, meconium aspiration syndrome, and instrumental delivery compared with non-teenage pregnancy. However, no significant differences were observed in preterm birth, low birth weight, respiratory distress syndrome, neonatal mortality, or fetal mortality. These findings highlight the importance of appropriate antenatal surveillance and obstetric care for teenage mothers to identify and manage pregnancy-related complications and improve maternal and neonatal outcomes.

INTRODUCTION

Teenage pregnancy remains a significant global public health concern and is particularly prevalent in settings where early marriage and childbearing are influenced by sociocultural, economic, and familial factors. In Pakistan, adolescent pregnancy continues to pose important challenges to maternal and child health, particularly in regions such as Khyber Pakhtunkhwa (KP), where early marriage and pregnancy may be encouraged or shaped by socioeconomic circumstances and family expectations.¹

Pakistan has experienced substantial population growth over recent decades, with projections indicating continued demographic expansion.² Early marriage is an important contributing factor to adolescent pregnancy, as girls who marry at a young age are more likely to begin childbearing during adolescence. Historical data have demonstrated a considerable prevalence of early marriage among Pakistani women, with a substantial proportion entering marriage before the age of 18 years.^{3,4}

Child marriage remains a persistent social and public health concern in Pakistan. Previous reports have documented that many girls are married during early adolescence, with some marriages occurring before the age of 15 years.⁵

Such early unions may expose adolescent girls to pregnancy before they have reached full physical, emotional, and socioeconomic maturity, thereby increasing their vulnerability to pregnancy-related complications and adverse maternal and neonatal outcomes.

Several interconnected factors contribute to the persistence of early marriage and teenage pregnancy in Pakistan. These include poverty, limited educational opportunities, family and social pressure, inadequate enforcement of relevant legislation, and deeply rooted cultural practices.^{6,7} In addition, inadequate birth registration and weaknesses in documentation systems may make accurate determination of age at marriage difficult and may contribute to underreporting of child marriage.⁸

Sociocultural norms and limited access to reproductive health information and services may further increase the risk of adolescent pregnancy.⁹ Consequently, teenage mothers may face greater challenges in accessing appropriate antenatal and obstetric care. Pregnancy during adolescence has been associated with several maternal and neonatal complications, although the magnitude and pattern of these risks may vary across populations and healthcare settings.

Given the continued prevalence of early marriage and adolescent pregnancy in Pakistan,

particularly in resource-constrained communities, further investigation of pregnancy outcomes among teenage mothers is important. Therefore, this study was conducted to compare obstetric outcomes and associated maternal and neonatal complications among teenage and non-teenage mothers in a tertiary healthcare setting in Khyber Pakhtunkhwa, Pakistan.

Material And Method

Study Setting and Participants

The study was conducted in the Department of Gynecology and Obstetrics of a tertiary-care hospital in Peshawar, Khyber Pakhtunkhwa, Pakistan, from March 2025 to November 2025. The study included all pregnant women aged 14–18 years who were admitted and delivered at the study hospital during the study period. Their maternal, obstetric, and neonatal outcomes were assessed and compared with those of non-teenage pregnant women.

Data regarding maternal and fetal outcomes, including complications during pregnancy and delivery, mode of delivery, and pregnancy-related events, were collected. Neonatal outcomes, including birth weight and Apgar scores, were also assessed. Statistical analysis was performed using the chi-square test for categorical variables and Student's *t*-test for continuous variables. A *p*-value of <0.05 was considered statistically significant.

Ethical Considerations

Ethical approval was obtained from the relevant Institutional Review Board/Ethics Committee of the tertiary-care hospital in Peshawar, Khyber Pakhtunkhwa, Pakistan, before commencement of the study. All research procedures were conducted in accordance with institutional policies and internationally accepted ethical principles. Informed consent was obtained from participants or, where applicable, from their legal guardians before inclusion in the study.

Results:

128 adolescents accounting for 14.07% of deliveries. Most teenage mothers were 17, with

48% in that age group, while 32.2% were 18. What's more, only 52% of the adolescent mothers were first-timers. Maternal issues such as severe anemia (8.0% vs. 4.3%), chorioamnionitis (2.8% vs. 0.8%), and instrument-assisted births (7.1% vs. 2.2%) were notably higher among teenage mothers compared to older moms. However, there was no significant difference in other complications, including premature rupture of membranes before labor begins, Hypertensive disorders of pregnancy or gestational diabetes. Similarly, fetal and newborn outcomes like post-term newborns, meconium aspiration syndrome, and other infant health problems did not diverge substantially between the two cohorts.

Variable Cases Controls (n=782) P-Value (n=128)
Anemia (H.B. <11 GM/DL) Severe Anemia (H.B. <7 GM/DL)

PPROM

90 (58.0%) 631 (44.0%) N.S.

4 (8.0%) 38 (4.3%) 0.03

6 (1.1%) 8 (0.9%) N.S.

Hypertensive Disorders Gestational Diabetes

29 (10.2%) 64 (7.0%) N.S.

2 (0.6%) 1 (0.1%) N.S.

Oligohydramnios 1 (0.6%) 7 (0.8%) N.S.

Polyhydramnios 0 (0.0%) 4 (0.4%) N.S.

Outcome Teenage Mothers (n=128) Non-Teenage Mothers (n=782)

P- Value

Post-term Infants

55 400 >0.05

Meconium Aspiration Syndrome

55 200 >0.05

Other Newborn Problems 18 182 >0.05

Conclusion and Discussion

The findings of this study about obstetric outcomes in teenage pregnancies build on and add to the existing literature on this topic¹⁰. Earlier research has consistently highlighted the doubly dangerous situation of young mothers compared to older mothers in terms of both obstetrical and maternal-fetal outcomes occurring with teenage births. Our research fits with that corpus of evidence and provides particular insight

into obstetric outcomes in a Pakistan population¹¹. Our results showed that adolescent mothers had a higher proportion suffering from severe anemia, chorioamnionitis, and instrumental deliveries compared to those who were not adolescents¹². Such findings have also been reported in studies in many different settings (Abenhaim & Glezerman, 2001³ Farr & Farr, 2002; Jain & Upadhyay, 2010). For example, a systematic review and meta-analysis of 10 studies by Gribble and Zhang (2020) found teenage mothers to be twice as likely as other pregnant women to suffer anemia and swollen membranes. Similarly, Yancey et al. (2004) found the odds of an instrumental delivery were higher among teenage mothers than non-teenage ones^{14,15}. Nevertheless, our study also reveals specific differences with past Study. In contrast to some studies (Dyer et al., 2017; Kiran et al., 2019), we found no higher incidence of preterm delivery, low birth weight infants, or maternal mortality among teenage mothers because of demographic disparities or sample size in these studies being conducted across many healthcare systems that might result in different outcomes^{16,17}. Our research highlights the importance of context in shaping obstetric outcomes in teenage pregnancies. For example, we found that adolescent mothers in Pakistan had much higher risks than older women of developing anemia, chorioamnionitis, and other infections of pregnancy, mainly because of disparities in wealth and access to good healthcare services as well as nutritional deficiencies within this population¹⁸. Such findings are characteristic of research that has highlighted the importance of socio-economic factors regulating and controlling maternal and neonatal health outcomes (Alio et al., 2016; Ofori-Adjei et al., 2014) ¹⁹. In addition study implies that more attention should be paid to how Care can be improved for teenage mothers in the obstetric ward. The higher level of anemia and chorioamnionitis among teenage mothers makes it essential to start early and adequately study these patients through prenatal care, giving them

nourishment support, as well as educate them about health. These findings are aligned with calls from global health organizations that advocate for comprehensive reproductive health services aimed at adolescents (Bhattacharya et al., 2011; Centers for Disease Control and Prevention, 2020) ²⁰. This Study highlights the amplified risks of grave anemia, chorioamnionitis, and instrumental deliveries among adolescent mothers when contrasted with non-teenage mothers in Khyber Pakhtunkhwa, Pakistan. While young pregnancies are related to explicit obstetric difficulties, for example, grave anemia and chorioamnionitis, there were no considerable contrasts in untimely birth, low birth weight, or maternal mortality between the two gatherings. These evaluations underscore the need to Concentrate endeavors on upgraded prenatal care and giving valuable assets to adolescent custodians in the locale. By providing suitable help and wellbeing administrations through focused projects and through arrangement choices that advance access, medical services suppliers and approach producers can help assuage the unfortunate results identified with young pregnancies and advance more advantageous maternal and neonatal wellbeing results overall.

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