

Clinical Study on Feto-Maternal Outcomes among Teenage Pregnancies in A Secondary Care Hospital

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ABSTRACT

Introduction: Teenage pregnancy continues to be a pressing public health issue worldwide, with profound implications for maternal and neonatal health outcomes. Understanding the demographic characteristics, obstetric features, and associated complications among teenage pregnancies is essential for informing targeted interventions and improving outcomes for adolescent mothers and their infants. In this study, we aim to explore the multifaceted dimensions of teenage pregnancy, examining demographic profiles, obstetric characteristics, maternal complications, delivery outcomes, and neonatal health outcomes. **Methods & Materials:** This prospective study at Naogaon Medical College from July 2021 to July 2022 analyzed 108 teenage pregnancies, examining demographics, obstetric features, maternal and neonatal complications, and maternal outcomes. Participants were selected via purposive sampling. **Result:** This study on teenage pregnancy revealed a predominance of adolescents aged 15-18 years, with secondary education and married status being common. A significant proportion of pregnancies had gestational ages below 20 weeks. Maternal complications included hypertensive disorders, abortions, PROM, lactational failure and anemia, while neonatal complications comprised low birth weight and respiratory distress. Vaginal deliveries slightly outnumbered cesarean sections, with most infants weighing between 1500-3000 grams. Maternal mortality was absent, but morbidity was reported in 7.4% of cases. **Conclusion:**

This study sheds light on the complexities of teenage pregnancy, revealing significant findings across demographic, obstetric, and neonatal domains. Despite advancements in maternal healthcare, teenage mothers face considerable challenges, including a higher prevalence of maternal and neonatal complications.

Keywords: Teenage pregnancy, Obstetric outcomes, Maternal complications, Neonatal health, Adolescent healthcare

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INTRODUCTION

Teenage pregnancies represent a complex public health issue with significant implications for both maternal and fetal health outcomes. The unique physiological, social, and economic factors surrounding adolescent pregnancy contribute to distinct feto-maternal outcomes that warrant focused attention and research. Understanding these outcomes is essential for crafting targeted interventions to improve the health and well-being of both adolescent mothers and their offspring. Defined as pregnancies occurring in individuals aged 19 years or younger, adolescent pregnancies pose unique challenges and risks during pregnancy and childbirth compared to pregnancies in older women. Globally, an estimated 16 million adolescent girls aged 15 to 19 years and two million girls under 15 years give birth each year, with the majority occurring in low- and middle-income countries^[1,2]. Despite efforts to reduce the overall teenage birth rate, adolescent pregnancies remain prevalent, with

approximately 194,377 babies born to mothers aged 15 to 19 years in the United States in 2019^[3]. Physiological immaturity, coupled with social and economic factors, contributes to the increased risks associated with teenage pregnancies. Adolescent mothers are more likely to experience adverse maternal outcomes such as pre-eclampsia, eclampsia, anemia, and complications during labor and delivery^[4,5]. Additionally, they face higher rates of preterm birth, low birth weight, and neonatal mortality compared to older mothers^[6]. Socioeconomic disparities further compound the challenges faced by pregnant teenagers. Limited access to prenatal care, education, and financial resources can impede optimal maternal and fetal health outcomes^[7]. Moreover, social stigma and inadequate support from family and partners can exacerbate stress and psychological distress among pregnant teenagers, adversely affecting maternal and fetal well-being^[8]. Understanding the specific feto-maternal outcomes among teenage pregnancies is essential for informing targeted

interventions and improving maternal and child health outcomes. Previous research has highlighted the importance of comprehensive prenatal care, adolescent-friendly health services, and community-based support programs in mitigating the risks associated with adolescent childbearing^[9,10]. The findings of this study will contribute to the existing body of literature on teenage pregnancies and inform evidence-based strategies for improving maternal and child health outcomes among this vulnerable population. By identifying key determinants of adverse fetomaternal outcomes, healthcare providers can develop targeted interventions to address the unique needs of pregnant teenagers and mitigate the risks associated with adolescent childbearing. Despite global efforts to reduce teenage pregnancy rates, it remains a prevalent issue with significant implications for public health. Teenage mothers often encounter heightened risks during pregnancy. So, this study aims to investigate the fetomaternal outcomes among teenage pregnancies in a secondary care hospital setting. The aim of the study is to investigate the fetomaternal outcomes among teenage pregnancies in a secondary care hospital

METHODS & MATERIALS

This prospective observational study aimed to comprehensively analyze the intricate dynamics of teenage pregnancies, focusing on demographic characteristics, obstetric features, maternal complications during pregnancy, delivery outcomes, neonatal complications, and maternal mortality and morbidity. Conducted at the Department of Obstetrics & Gynaecology, Naogaon Medical College, from July 2021 to July 2022, a total of 108 participants were selected using a purposive sampling technique. Inclusion criteria included pregnant individuals aged 13 to 19 years with meticulously documented data on demographic profiles, obstetric parameters, maternal complications, delivery outcomes, neonatal health indicators, and maternal mortality and morbidity. Exclusion criteria comprised individuals outside the specified age range and those who did not consent to participate. Data collection was meticulous, utilizing medical records and obstetric databases from participating healthcare facilities, encompassing demographic nuances such as age, educational attainment, and marital status, alongside obstetric intricacies like gestational age and mode of delivery. Detailed documentation of maternal complications during pregnancy, delivery outcomes, neonatal health parameters, and maternal mortality and morbidity provided a holistic understanding of the teenage pregnancy landscape. Descriptive statistics succinctly summarized the multifaceted data, offering insightful glimpses into various aspects of teenage pregnancies. Ethical principles were stringently adhered to, with approval obtained from the Institutional Review Board, ensuring the research's ethical integrity. Utmost care was exercised to safeguard patient confidentiality and uphold data anonymity, respecting the privacy rights of all individuals involved.

RESULTS

Table – I: Demographic Characteristics of Teenage Pregnancies (n=108)

Variables	n (%)
Age (years)	
13-15	36 (33.3)
16-18	52 (48.1)
19	20 (18.5)
Education Level	
Primary	24 (22.2)
Secondary	60 (55.6)
Tertiary	24 (22.2)

Regarding age distribution, the majority of teenage pregnancies were observed in the 16-18 age group, comprising 52 individuals (48.1% of the total sample), followed by 36 pregnancies (33.3%) in the 13-15 age group, and 20 pregnancies (18.5%) in the 19 years age group. In terms of education level, most participants had a secondary education, with 60 pregnancies (55.6%), followed by 24 pregnancies (22.2%) each for those with primary and tertiary education. [Table I]

Table – II: Obstetric Characteristics of Teenage Pregnancies (n=108)

Gestational Age (weeks)	n (%)
< 20	16 (14.8)
20-28	19 (17.6)
29-36	39 (36.1)
37-40	34 (31.4)

The gestational age distribution among the infants shows that 14.8% are born before 20 weeks, and 17.6% are born between 20 and 28 weeks, indicating a notable proportion of extremely preterm births. Infants born between 29 and 36 weeks make up the largest group at 36.1%, while those born at full term (37-40 weeks) account for 31.4%. [Table II]

Table – III: Maternal Complications during Pregnancy (n=108)

Complications	n (%)
Hypertensive Disorders	8 (7.4)
Anemia	32 (29.6)
Preterm Labor	39 (36.1)
Urinary Tract Infection	12 (11.1)

Preterm labor is the most prevalent, affecting 36.1% of the mothers. Anemia is also common, seen in 29.6% of cases. Urinary tract infections occur in 11.1% of the pregnancies, and hypertensive disorders affect 7.4%. [Table III]

Table – IV: Delivery and Neonatal Outcomes (n=108)

Variables	n (%)
Mode of Delivery	
Vaginal	56 (51.9)
Cesarean Section	52 (48.1)
Birth Weight (grams)	
< 1000	19 (17.6)
1000 - 1499	16 (14.8)
1500-2499	32 (19.6)
>2500	41 (37.96)

Regarding the mode of delivery, the data indicates that vaginal deliveries accounted for 51.9% of the cases, while cesarean sections comprised 48.1%. The birth weight distribution shows that 17.6% of infants weigh less than 1000 grams, and 14.8% weigh between 1000 and 1499 grams, indicating a notable presence of very low birth weight infants. Infants weighing between 1500 and 2499 grams make up 19.6% of the population, while the majority, 37.96%, weigh over 2500 grams, falling within the normal range. [Table IV]

Table – V: Neonatal Complications (n=88)

Complications	n (%)
Low Birth Weight	34 (40.9)
Respiratory Distress	16 (19.2)
Neonatal Jaundice	18 (21.6)
Birth Trauma	10 (12.04)
Neonatal Sepsis	05 (4.8)

The distribution of complications among the newborns reveals that 40.9% experience low birth weight, which is the most common issue. Respiratory distress affects 19.2% of the infants, while 21.6% suffer from neonatal jaundice. Birth trauma is reported in 12.04% of cases, and 4.8% of the infants develop neonatal sepsis. [Table V]

Table – VI: Maternal Mortality and Morbidity (n=108)

Outcome	n (%)
Maternal Mortality	0 (0.0%)
Maternal Morbidity	8 (7.4%)

Notably, there were no instances of maternal mortality recorded in the sample, indicating a positive outcome in terms of maternal survival. However, maternal morbidity was reported in 7.4% of the cases, signifying instances where mothers experienced health complications during the perinatal period. [Table VI]

DISCUSSION

The majority of teenage pregnancies occurred in the 16-18 age group (48.1%), consistent with previous studies

indicating that mid-to-late adolescence is a peak period for teenage pregnancies^[11,2]. This trend highlights the critical need for targeted sexual education and reproductive health services for this age group. The educational level distribution shows a significant proportion of secondary education (55.6%), reflecting similar trends in other studies where educational disruption often accompanies teenage pregnancies^[4]. This suggests that pregnancy in adolescence can significantly impact educational attainment, limiting future opportunities for these young mothers. The gestational age distribution indicates that a considerable number of pregnancies result in preterm births, with 36.1% occurring between 29-36 weeks and 17.6% between 20-28 weeks. This is comparable to findings in other research highlighting the higher incidence of preterm births in teenage pregnancies^[12]. Preterm births are associated with a range of neonatal complications, underlining the need for specialized prenatal care to mitigate these risks. The high rate of preterm labor (36.1%) further emphasizes the vulnerability of pregnant teenagers to early delivery and its associated complications. The prevalence of preterm labor (36.1%) and anemia (29.6%) as the most common maternal complications aligns with existing studies, which often report these conditions as significant health concerns for pregnant teenagers^[13]. Anemia in pregnant teenagers can lead to increased fatigue, infections, and complications during delivery. The incidence of urinary tract infections (11.1%) and hypertensive disorders (7.4%) further corroborates the heightened vulnerability of this demographic to such complications^[14]. These findings suggest a need for enhanced prenatal care and monitoring to address these health issues early in pregnancy. Vaginal deliveries were slightly more common (51.9%) than cesarean sections (48.1%), a trend observed in similar cohorts^[1]. The mode of delivery in teenage pregnancies can be influenced by various factors, including the health of the mother and the fetus, as well as complications that arise during pregnancy. The distribution of birth weights indicates a notable presence of very low birth weight infants (<1000 grams, 17.6%) and low birth weight infants (1000-1499 grams, 14.8%), highlighting the increased risk of neonatal complications in teenage pregnancies^[15]. Low birth weight (40.9%) and neonatal jaundice (21.6%) were prevalent, reflecting the critical health challenges faced by newborns of teenage mothers. The incidence of respiratory distress (19.2%) and birth trauma (12.04%) further supports the notion that infants born to teenage mothers are at higher risk of adverse neonatal outcomes^[16]. The absence of maternal mortality is a positive outcome, suggesting effective maternal care during the perinatal period. However, the maternal morbidity rate of 7.4% indicates that health complications during pregnancy are still a significant issue for teenage mothers^[17].

Limitations of The Study

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

CONCLUSION

This study sheds light on the complexities of teenage pregnancy, revealing significant findings across demographic, obstetric, and neonatal domains. Despite advancements in maternal healthcare, teenage mothers face considerable challenges, including a higher prevalence of maternal and neonatal complications. These findings underscore the urgent need for targeted interventions and comprehensive support systems to address the unique needs of adolescent mothers and their infants.

RECOMMENDATION

To address the complexities of teenage pregnancy, it is crucial to implement comprehensive and tailored interventions. This includes strengthening sex education programs in schools, promoting access to affordable contraception, and offering youth-friendly reproductive health services. Additionally, there is a need for community-based support programs targeting adolescent mothers, providing social and psychological support, as well as access to prenatal and postnatal care. Furthermore, healthcare providers should receive training in adolescent-friendly care to ensure that teenage mothers receive quality healthcare services that are sensitive to their unique needs and circumstances.

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