



ADVERSE NEONATAL OUTCOME IN ADOLESCENT PREGNANCY

Paediatrics

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ABSTRACT

Introduction: Adolescent pregnancy, prevalent in low- and middle-income countries, poses significant risks to both mother and child, including neonatal complications, low birth weight, and increased infant mortality. Factors such as early marriage, limited education, and poverty contribute to this issue. **Methods:** This cross-sectional record-based study, conducted at Civil Hospital, Palanpur, from January 2023 to June 2023, aimed to assess adverse neonatal outcomes in adolescent pregnancies. The study included 162 pregnant females aged 10 to 19 years who gave birth at the hospital, and data were collected from medical and neonatal health records. Findings revealed key information about maternal age, gestational age, neonatal birth weight, and adverse outcomes such as preterm birth, low birth weight, and neonatal complications in this adolescent pregnancy population. **Results:** A study conducted between January and June 2023 reported 162 adolescent pregnancies, with 90.74% being first gravida and 9.25% second gravida. Outcomes revealed that 68.51% reached full term, 31.48% were preterm, and a significant proportion of neonates faced low birth weights, with 3.09% ELBW, 17.90% VLBW, and 61.72% LBW. Among these infants, 69.13% required NICU admission, while 30.86% received routine care after birth. **Conclusion:** This study highlights the alarming rates of adverse neonatal outcomes in adolescent pregnancies, emphasizing the need for targeted interventions and comprehensive healthcare strategies to enhance the well-being of both young mothers and their newborns.

KEYWORDS

INTRODUCTION

Adolescent pregnancy is defined as pregnancy in girls aged 10–19 years. It is estimated that about 11% of births worldwide are to adolescents aged 15–19 years, and more than 90% of these births occur in low- and middle-income countries(1)

Teenage mothers are at high risk of neonatal complications include preterm birth, poor fetal growth, low birth weight, neonatal mortality (2), respiratory diseases and birth trauma, besides a higher frequency of neonatal complications and infant mortality (3)

Pregnancy during adolescence is considered a social issue associated with medical, emotional and social outcomes for the mother, child and family (4)

Early marriage, in some traditional rural communities, low educational level, low level of sexual education and contraceptive use, high rate of poverty are important factors in the rate of adolescent pregnancy. Adolescent mothers are more likely to have poor prenatal health behaviors and poorer health status (5)

In these group of women, pregnancy and delivery are not only associated with adverse pregnancy outcomes, but also associated with low school achievement, increased health care costs, and living in poverty (6)

Many adolescent mothers lack adequate prenatal care, proper nutrition, and access to healthcare resources. These factors can lead to suboptimal fetal development and inadequate maternal health, both of which increase the likelihood of adverse neonatal outcomes (7)

MATERIALS AND METHODS:

Study Design:

This study is a cross-sectional record-based investigation conducted at Civil Hospital, Palanpur, with the primary objective of assessing adverse neonatal outcomes in adolescent pregnancies. The study was carried out during the period from January 2023 to June 2023.

Study Site:

The study was conducted at Civil Hospital, Palanpur, and a tertiary care hospital that provides comprehensive healthcare services, including maternal and neonatal care.

Sample Size:

The study included a total of 162 pregnant females within the age range of 10 to 19 years, who gave birth at Civil Hospital, Palanpur, during the

study period. The adolescent pregnancy group comprised the study population.

Inclusion Criteria:

Pregnant females aged 10 to 19 years.

Pregnant females who underwent hospital delivery at Civil Hospital, Palanpur.

Exclusion Criteria:

High-risk pregnancies: Pregnancies with pre-existing medical conditions or complications.

Out-of-hospital deliveries: Pregnant females who delivered outside the hospital setting.

Data Collection:

Data for this study was collected from the medical records and neonatal health records available at Civil Hospital, Palanpur, during the study period. Information was gathered on maternal age, gestational age, neonatal birth weight, Apgar score, and any adverse neonatal outcomes such as preterm birth, low birth weight, and neonatal complications. All data were recorded and entered into Microsoft Excel software for subsequent analysis.

Statistical analysis:

Between January 2023 and June 2023, a total of 162 adolescent pregnancies were reported. Out of these cases, 147 pregnancies (90.74%) were first gravida, while 15 pregnancies (9.25%) were second gravida. Out of these cases, 111 pregnancies (68.51%) reached full term, while 51 pregnancies (31.48%) were preterm.

Table 1 Gestational age wise neonatal outcome

Mother Age	Term	Preterm
13	1	1
14	13	6
15	9	11
16	28	8
17	15	13
18	21	6
19	24	6
TOTAL	111(68.51%)	51(31.48%)

The neonatal outcomes of adolescent pregnancies are concerning, with a significant proportion of infants facing adverse birth weights. A staggering 3.09% of babies were extremely low birth weight (ELBW),

while 17.90% were very low birth weight (VLBW), and 61.72% were born with low birth weight (LBW).

Table 2 Neonatal birth weight comparison in adolescent pregnancy

Mother Age	ELBW	VLBW	LBW	>2.5
13	0	1	1	0
14	1	3	14	1
15	0	1	15	4
16	1	7	18	10
17	3	4	14	7
18	0	6	18	3
19	0	7	20	3
TOTAL	5(3.09%)	29(17.90%)	100(61.72%)	28(17.28%)

In this adolescent pregnancy cohort, 112(69.13%) of neonates required NICU admission, while 50(30.86%) received normal routine care after birth.

Table 3 Neonatal Morbidity

Mother Age	No NICU admission	NICU admission
13	1	1
14	6	13
15	9	11
16	13	23
17	11	17
18	5	32
19	6	34
TOTAL	50(30.86%)	112(69.13%)

Out of 112 neonatal intensive care unit (NICU) admissions, a total of 10(8.92%)

Infants were admitted due to birth asphyxia, 14(12.5%) were diagnosed with intrauterine growth restriction (IUGR), and 9(8.03%) required care for neonatal jaundice. Additionally, there were 13(11.60%) cases of meconium aspiration syndrome, 18(16.07%) cases of neonatal sepsis, 32(28.57%) infants with respiratory distress syndrome, and 12(10.71429%) with transient tachypnea of the newborn among the admissions

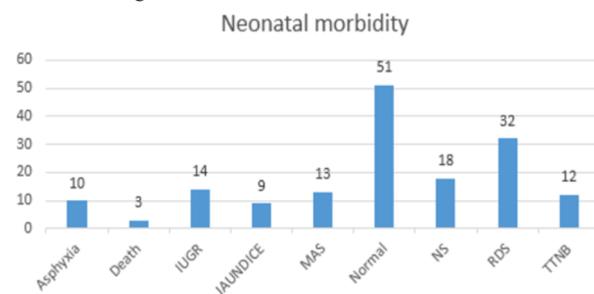


Figure 1 Neonatal Morbidity

DISCUSSION

Adolescent pregnancy is a significant public health concern that can have far-reaching consequences, not only for the young mothers but also for their newborns. This study aimed to investigate the neonatal outcomes of adolescent pregnancies between January 2023 and June 2023, shedding light on the challenges and potential areas for improvement in antenatal and neonatal care for this vulnerable population.

The findings of this study reveal several important aspects of neonatal outcomes in adolescent pregnancies. It is evident that a substantial number of adolescent pregnancies are first gravidas (90.74%), highlighting the lack of prior pregnancy experience in this age group. This lack of experience could contribute to inadequate prenatal care and health education, potentially affecting the overall health of both the mother and the newborn. The proportion of pregnancies reaching full term (68.51%) is lower than the expected average for pregnancies in the general population, indicating an increased risk of preterm births in adolescents.

The increased likelihood of preterm birth is a well-documented risk associated with adolescent pregnancies, and it can lead to various

complications and long-term health issues for the newborns.

One of the most concerning findings is the distribution of birth weights in neonates born to adolescent mothers. A significant percentage of babies were found to have low birth weight (LBW), with 3.09% categorized as extremely low birth weight (ELBW) and 17.90% as very low birth weight (VLBW). Low birth weight is a known risk factor for various neonatal complications and can have lasting health implications for the child. The high prevalence of LBW in this study emphasizes the need for improved antenatal care, nutritional support, and health education for pregnant adolescents to mitigate this risk.

The study also highlights the utilization of neonatal intensive care units (NICUs) in this population. A substantial majority (69.13%) of neonates born to adolescent mothers required NICU admission, indicating a high burden on healthcare resources. The most common reasons for NICU admissions were birth asphyxia, intrauterine growth restriction (IUGR), and neonatal jaundice. These findings emphasize the importance of closely monitoring pregnancies in adolescents and implementing early interventions to prevent and manage these complications.

The study identified other neonatal issues that required NICU care, such as meconium aspiration syndrome, neonatal sepsis, respiratory distress syndrome, and transient tachypnea of the newborn. These findings underscore the complexity of neonatal care for infants born to adolescent mothers and highlight the need for specialized healthcare services and multidisciplinary approaches to address these diverse health challenges.

CONCLUSION

In conclusion, this study sheds light on the neonatal outcomes in adolescent pregnancies, demonstrating a high prevalence of adverse birth outcomes, such as preterm births and low birth weights, as well as a significant demand for NICU care. These findings underscore the urgency of implementing targeted interventions to improve the antenatal and neonatal care for pregnant adolescents. Comprehensive healthcare strategies should aim to reduce the risks associated with adolescent pregnancies, provide adequate support and education, and ultimately enhance the overall well-being of both adolescent mothers and their newborns.

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