

# Obstetric Complications in Adolescents and Impact on Maternal and Infant Health: Results of a Retrospective Analysis in a Brazilian Hospital (2019-2021)

This study aimed to identify the incidence of adolescent pregnancies, types of deliveries, hospitalization categories, and obstetric diagnoses in a Brazilian university hospital between January 2019 and August 2021.

A retrospective study was conducted, analyzing 188 electronic medical records of adolescents aged 10 to 19 years. The variables collected included age, number of pregnancies, types of deliveries, risk level of hospitalization, length of hospital stay, maternal and fetal complications, obstetric diagnoses, family planning, and gestational age at birth. Descriptive analyses were performed to calculate absolute frequencies, percentages, means, and standard deviations.

The majority of the adolescents were primigravida (84.6%), and vaginal delivery was predominant (63.3%). Obstetric complications occurred in 35.1% of the cases, with perineal lacerations and episiotomies being the most common (40.0%). The mean gestational age at birth was 37.5 weeks, with a prematurity rate of 14.4%. Postpartum family planning was accepted by 40.8% of the adolescents, with the intrauterine device (IUD) being the most chosen method (48.5%).

Adolescent pregnancy remains a public health challenge, associated with significant obstetric complications. The high acceptance of postpartum contraceptive methods, especially the IUD, highlights the importance of educational and reproductive health interventions to improve maternal and infant outcomes in this population.

**Keywords:** Adolescent pregnancy; Obstetric complications; Family planning

## Introduction

Adolescence, defined by the World Health Organization (WHO) as the period between 10 and 19 years of age, is a phase marked by significant physical, emotional, and social changes [1]. During this period, early sexual initiation and limited access to reproductive health information increase the risk of unplanned pregnancy, which constitutes a public health issue in many parts of the world, especially in developing countries like Brazil [2].

Adolescent pregnancy is considered a public health challenge due to its association with a series of obstetric complications, such as maternal anaemia, pregnancy-specific hypertension, preterm birth, and low birth weight [3]. These issues can lead to serious consequences for both the mother and the new-born, requiring special attention during the gestational and postpartum periods.

In addition to physical complications, early pregnancy can lead to long-term social and economic disadvantages. Pregnant adolescents often face educational and employment barriers, perpetuating cycles of poverty that affect their future opportunities and quality of life [4]. This situation makes adolescent pregnancy not only a health problem but also a significant social challenge. Studies indicate that approximately 21% of births in Brazil occur among adolescent mothers, an alarming statistic that underscores the need for effective interventions [5]. This scenario is even more concerning in regions with high levels of social inequality, where access to prenatal care and effective contraceptive methods is limited.

The choice of a Brazilian university hospital as the study site is

justified by the representativeness of the institution, which serves a diverse population and reflects the reality of pregnant adolescents in similar contexts [6]. Furthermore, the hospital serves as a reference center for clinical studies, providing a robust database for retrospective analysis.

This study aims to analyze the incidence of adolescent pregnancy, types of deliveries, hospitalization categories, and obstetric diagnoses. The study period covers from 2019 to 2021, offering a comprehensive view of the challenges faced by this population in a Brazilian hospital context [7].

Based on these data, this study seeks to contribute to a deeper understanding of the factors influencing maternal and infant outcomes in adolescents. The findings of this study may inform the development of public health strategies aimed at reducing adolescent pregnancy rates and improving obstetric care [8].

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## OBJECTIVE

To identify the number, types of deliveries, hospitalization categories, and obstetric diagnoses among adolescents aged 10 to 19

test, as appropriate. A p-value of  $<0.05$  was considered statistically significant.

## ETHICS APPROVAL

This study was approved by the Human Research Ethics Committee under protocol no. 5.761.236, in accordance with Resolution 466/12. All data collected were kept confidential, and the patients were not identified at any time during the study.

## RESULTS

**Sociodemographic Characteristics and Length of Hospital Stay.** The sociodemographic characteristics of the adolescents and the length of hospital stay are summarized in Table 1. The mean age of the patients was 15 years (median: 14 years; standard deviation: 1.5 years), with an average hospital stay of 4.5 days (median: 3 days; standard deviation: 2 days).

Details the types of surgeries performed and the access routes used, highlighting the predominance of normal deliveries and the vaginal route Table 2.

Obstetric complications and diagnoses are presented in Table 3, with episiotomy being the most common complication and hypothyroidism the most frequent diagnosis.

Family planning data are presented in Table 4, showing that the

majority of adolescents refused family planning, with the IUD being the most accepted method among those who agreed.

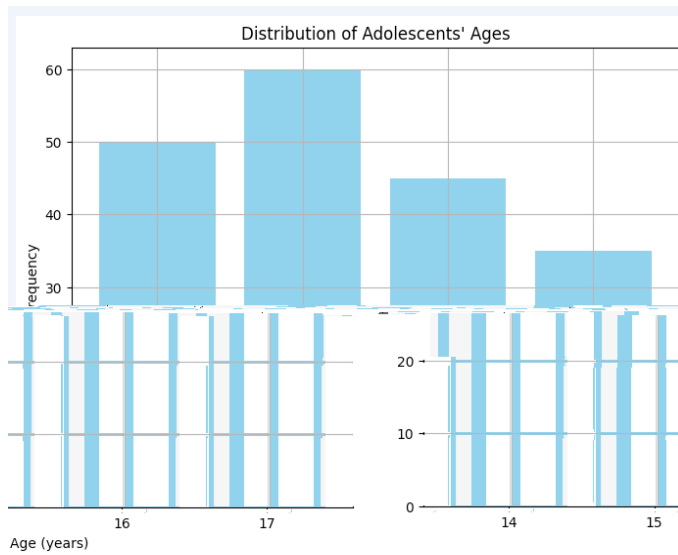
Table 5 Presents data on the gestational age of the newborns, highlighting the mean, median, standard deviation, minimum, and maximum for this variable.

The age distribution of pregnant adolescents is represented in Figure 1, highlighting the predominance of ages between 14 and 17 years. Figure 2 shows the distribution of postpartum family planning, indicating that the IUD was the most accepted contraceptive method. Figure 3 illustrates the postpartum contraceptive methods accepted by the adolescents, with the IUD being the most frequent.

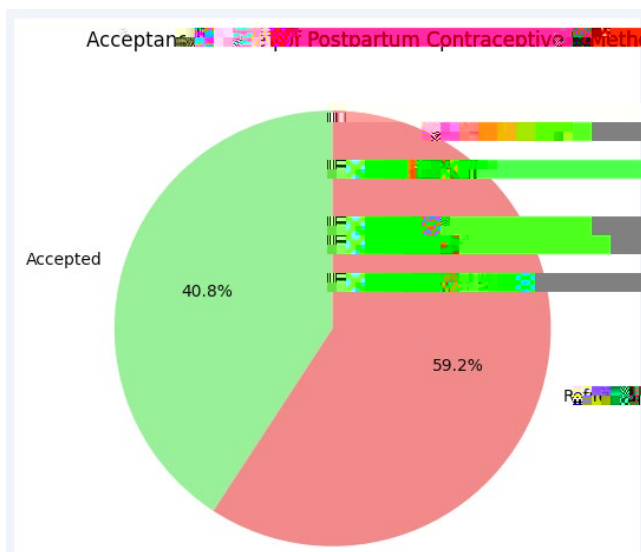
The distribution of delivery types among adolescents, highlighting

Gestational Age at Birth.

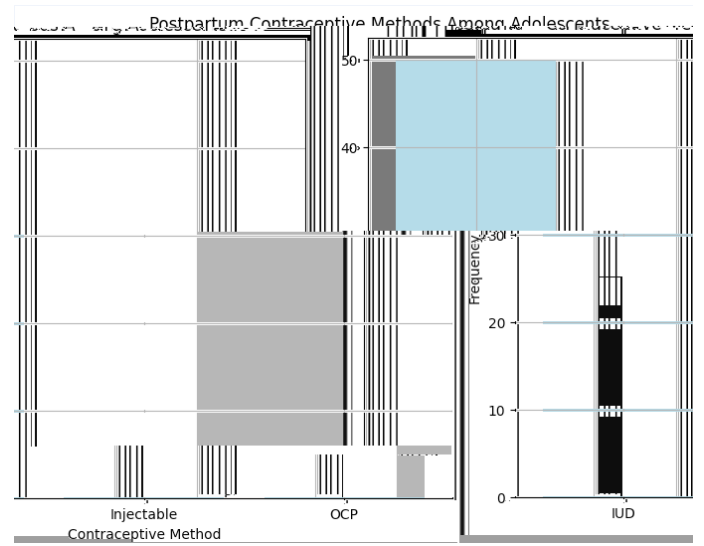
Gestational Age (weeks)	37.5	38	2.5	29	41



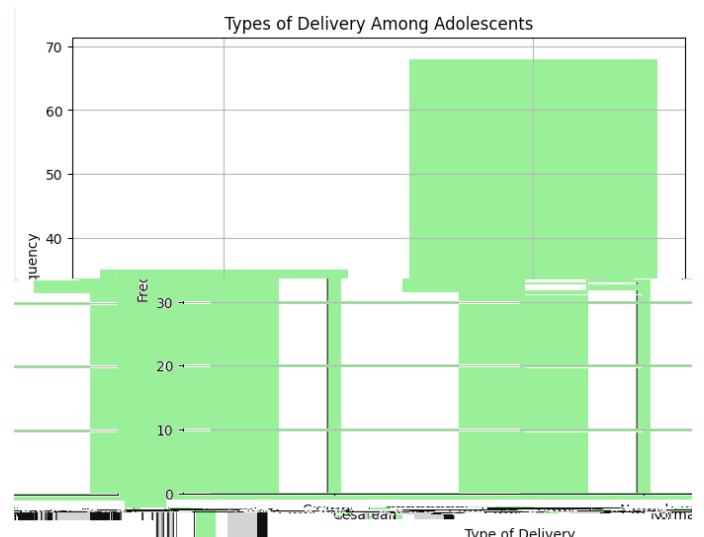
Age Distribution of Adolescents.



Acceptance of Postpartum Contraceptive Methods.



Postpartum contraceptive methods accepted by the adolescents, with the IUD being the most frequent.



Types of Deliveries among Adolescents.

the predominance of vaginal delivery, is illustrated in Figure 4.

Figure 5 illustrates the distribution of the number of abortions and primigravida among the analyzed adolescents.

Figure 6 presents the distribution of gestational age at birth among the newborns.

## D

Adolescent pregnancy is a global public health issue with significant implications for both adolescent mothers and their children. Numerous studies have compared obstetric and neonatal outcomes in pregnant adolescents with those of adult women, revealing a series of complications associated with adolescent pregnancies [1,9].

Studies conducted in different regions of Brazil and other countries show results similar to those of this study. For example, a study conducted in the Northeast region of Brazil found that adolescent pregnancy is frequently associated with obstetric complications such as anemia, gestational hypertension, and preterm birth. Another



maternal and infant health outcomes and reduce the incidence of obstetric complications.

## C

Adolescent pregnancy continues to be a significant public health challenge with substantial implications for maternal and neonatal health. This study revealed a high rate of obstetric complications among pregnant adolescents, including perineal lacerations, episiotomies, and preterm births. Additionally, the high acceptance of postpartum contraceptive methods, particularly the intrauterine device (IUD), underscores the importance of educational and reproductive health interventions in this population.

Our results indicate that pregnant adolescents face increased risks of complications, reinforcing the need for rigorous and comprehensive prenatal care. Public health programs should be directed towards promoting comprehensive sex education and access to effective contraceptive methods, aiming to reduce the incidence of unplanned pregnancies and improve maternal and infant health outcomes.

To strengthen the evidence base and inform effective policies, future research should focus on longitudinal studies that follow pregnant adolescents and their children over time, evaluating the long-term impacts of obstetric and neonatal complications. Additionally, it is essential to investigate the effectiveness of different educational and reproductive health interventions in reducing adolescent pregnancy rates, with comparisons across different regions and socioeconomic contexts.

In clinical practice, healthcare professionals should be trained to provide appropriate contraceptive counseling and continuous support to pregnant adolescents, promoting the use of effective contraceptive methods to prevent unwanted pregnancies. Implementing public policies that ensure access to quality prenatal care and psychosocial support is crucial to mitigating the negative impacts of adolescent pregnancy.

Investing in strategies that combine sex education, access to contraceptive methods, psychosocial support, and adequate prenatal care can play a decisive role in improving health outcomes for pregnant adolescents. These actions not only promote healthy reproductive health but also contribute to reducing associated complications and breaking the cycle of poverty, providing a more promising future for young mothers and their children.

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