

Epidemiological and Clinical Features of Adolescent Mothers Managed in Two Referral Maternity Hospitals in Yaoundé in 2023

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How to cite this paper: Batoum, V.S.M., Nyada, S., Clifford, E., Nsahlai, C., Isidore, T., Mpono, P., Madie, N.D., Vanina, N.A. and Um, E.J.M.N. (2025) Epidemiological and Clinical Features of Adolescent Mothers Managed in Two Referral Maternity Hospitals in Yaoundé in 2023. *Advances in Reproductive Sciences*, 13, 294-302.

<https://doi.org/10.4236/arsci.2025.134024>

Received: September 12, 2025

Accepted: October 20, 2025

Published: October 23, 2025

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Abstract

Introduction: In Cameroon, adolescents accounted for 23.5% of the population in 2018. The rate of teenage pregnancies was 24% (EDS 2018). **The objective** of this study was to investigate the epidemiological and clinical profiles of adolescent mothers followed at the Gyneco-Obstetric and Pediatric Hospital and the Central Hospital of Yaoundé. **Methodology:** The study employed a cross-sectional and descriptive method, focusing on girls aged 10 to 19 who gave birth between August 2022 and May 2023. Data were collected from registers and interviews, imported into CPro software version 7.7, and then extracted and analysed using IBM SPSS software version 23. **Results:** For the 206 adolescent mothers included, the average age was 18.13 years (± 1.17 years), and 2.4% were under 15 years old. They were all financially dependent on their relatives. For 72.3% of the adolescents, the level of education was secondary. Since pregnancy, 62.3% had dropped out of school. They were in a relationship in 73.3% of cases. The Christian religion was the majority (82.5%), and 57.7% of the population lived with their parents. 72.8% of pregnancies were unwanted. 92.7% were primiparous and 7.2% multiparous. 29.1% gave birth to newborns weighing less than 2.5 kg, 31.5% had a caesarean section, 40% of deliveries were premature, 49% had perineal tears. **Conclusion:** Unplanned pregnancies, dropping out of school, precariousness and maternal and neonatal morbidity are characteristics presented by adolescent mothers.

Keywords

Adolescent Mothers, Epidemiological and Clinical Profile

1. Introduction

Globally, more than 10% of births occur among adolescent girls aged 15 to 19. Of the 15 million teenage girls who give birth each year, 12.8 million, or over 90%, live in developing countries [1]. In Cameroon, the prevalence of teenage pregnancies is 24%; 5% of these girls are pregnant with their first child, and 19% have had at least one child [2]. The adolescent population is particularly vulnerable, and maternal mortality is the second leading cause of death for girls aged 15 to 19 worldwide [1].

To better understand the issue of teenage pregnancies and help reduce early pregnancies, this study was carried out to determine the epidemiological and clinical profile of teenage mothers attended at the Gyneco-Obstetric and Paediatric Hospital, as well as the Central Hospital of Yaoundé.

2. Methodology

A descriptive cross-sectional study was conducted. Young girls aged 10 to 19 years who gave birth at the Yaoundé Central Hospital (HCY) and the Yaoundé Gyneco-Obstetric and Paediatric Hospital (HGOPY) from 1st August 2022 to 31st May 2023 were included.

All postpartum adolescents who freely agreed to participate and whose parents consented were part of the study. The sample size was calculated using the single population proportion formula (Cochran, 1977):

$$n = \frac{Z^2 \times p \times (1 - p)}{e^2}$$

where $Z = 1.96$ (95% confidence), $p = 0.0284$ (proportion of adolescent deliveries reported at Yaoundé General Hospital between 1993 and 2012; Ngowa *et al.*, 2015), and $d = 0.05$ (margin of error). Substituting the values:

$$n = \frac{(1.96)^2 \times 0.0284 \times (1 - 0.0284)}{0.05 \times 0.05} = 43$$

considering the feasibility and the actual number of adolescent mothers managed in the two referral maternity hospitals during the study period, an exhaustive recruitment approach was adopted. Delivery registers were reviewed to identify adolescent mothers and obtain their contact information. Recruitment was conducted via telephone interviews, and obstetrical data were extracted from the registers.

The final sample included 206 adolescent mothers, representing all eligible cases managed in the two referral maternity hospitals during the study period, ensuring maximal representativeness and minimizing sampling bias.

The variables collected included: sociodemographic characteristics (age, profession, level of education, marital status, financial provider) and clinical data (pregnancy, parity, obstetric and gynaecological history). An unwanted pregnancy was defined as a pregnancy that the mother did not desire at the time of conception. It was assessed using a structured questionnaire with the question: “At the time you became pregnant, did you want to become pregnant? Yes, or not at all?” Responses of “not at all” were classified as unwanted pregnancies for analysis.

The collected data were analysed using IBM SPSS version 23 software. The significance level was pre-set at 5%.

This study was approved by the Institutional Ethics and Research Committee of the Faculty of Medicine and Biomedical Sciences of the University of Yaounde I and the Institutional Ethics Committee for Research in Human Health of the gynecology-obstetrics and pediatric hospital of Yaounde. Administrative authorization from the participating referral hospitals was obtained. In addition, written informed consent was obtained from participants aged 18 years and above, while for those under 18 years, assent was obtained along with parental or guardian consent. Confidentiality and anonymity were ensured, and all data were used solely for research purposes in accordance with the Declaration of Helsinki.

3. Results

During the study period, 206 teenage mothers were included.

Socio-demographic characteristics (Table 1)

The mean age of the participants was 18.13 years (± 1.17 years), with a predominant age range of 16 to 19 years. The most common level of education was secondary school. 72.3%, and 12.6% had ceased studying at primary school. Teenage mothers were single in 23.3% of cases, while the majority were in a relationship in 73.3% of cases; only 3.4% were married. Students made up 29.9% of the study population, and 50.5% of the participants had no professional occupation. Their socio-economic situation was marked by financial dependence on relatives (parents, spouses, or siblings) in 99% of cases.

Table 1. Distribution of participants according to their social and demographic characteristics.

Variable	N = 206 n	(%)
Age groups		
13 - 15 years old	5	2.4
16 - 19 years old	202	97.6
Level of study		
None	4	1.9
Primary	26	12.6
Secondary	149	72.3
Superior	27	13.1

Continued

Marital status		
In a relationship (open union or simply emotionally committed)	151	73.3
Bachelor	48	23.3
Bride	7	3.4
Religion		
Catholic	110	53.4
Protestants	60	29.1
Muslim	29	14.1
Jehovah's Witnesses	7	3.4
Residence		
Rural	15	7.3
Urban	191	92.7
Occupation		
No occupation	104	50.5
Pupil	61	29.9
Student	16	7.8
Informal sector	25	11.8

Obstetric characteristics

Of the adolescent mothers surveyed, 92.71% were primiparous, and 72.81% reported that their pregnancies were unwanted. A history of caesarean section was noted by 31.55% of participants (Table 2).

Table 2. Distribution of cases and controls by pregnancy desire, parity, and route of last delivery.

Variable	Staff N = 206	Frequency %
Last voluntary pregnancy		
No	150	72.81
Yes	56	27.18
Consult the PF service.		
No	147	71.35
Yes	59	28.64
Way of the last birth		
Caesarean section	65	31.55
Vaginal delivery	141	68.44
Term at last delivery		
Less than 37 weeks	74	35.92
More than 37 weeks	132	64.07

Continued

Newborn birth weight		
Less than 2.5 kg	60	29.12
More than 2.5 kg	146	70.87
Perinatal death		
Yes	20	9.70
No	186	90.29

Only 9.70% of adolescent girls used dual protection as their method of contraception (**Figure 1**).

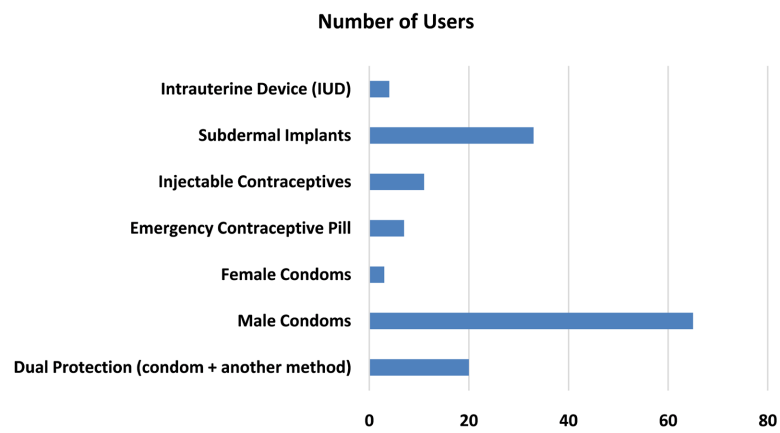


Figure 1. Distribution of participants according to modern contraceptive methods used.

The preterm delivery rate was 35.92% within the study population. Among adolescent mothers who delivered, 29.12% had low birth weight infants (<2500 g). Perinatal deaths were reported in 9.70% of teenage mothers (**Table 2**).

4. Discussion

Understanding the epidemiological and clinical profile of adolescent mothers is crucial for the effective development of public health policies and for enhancing adolescents' healthcare services. Due to the associated maternal and perinatal risks, teenage pregnancy presents a significant challenge for clinicians.

1. Sociodemographic characteristics

This study shows that teenage pregnancies mainly occur among those aged 16 to 19 years. This trend aligns with the results of the Cameroon Demographic and Health Survey in 2018 [2] and is also reported by Worku *et al.* in 2021, following a demographic and health survey in 12 East African countries involving 17,234 adolescents [3]. Frequent pregnancies in this age group may be due to the proximity of this period to adulthood and the more noticeable morphological and biological changes characteristic of this age [3]-[5].

Pregnancies in children under 15 years of age were notably less common in this

study. The age group of 10 to 15 years accounted for only 2.4% of adolescent mothers. This aligns with the findings of several studies [4] [6]. However, pregnancies before 15 years old

could result from sexual abuse, early marriage, and may be linked to an increased risk of obstetric complications [7]-[9].

About one in five adolescent girls in this study was single at the time of pregnancy. While 73.3% of adolescent girls were in a relationship, only 3.4% were married. These findings resemble those reported by the National Institute of Statistics in 2020, indicating a significant proportion of adolescent mothers living in a common-law relationship [2]. Pregnancy in this context might highlight limited emotional, economic, and social support among these young people, thereby increasing their vulnerability [5] [10]. Moreover, the majority of participants (99%) were financially dependent on their loved ones (parents, spouses, or siblings). This dependence could affect their autonomy and restrict their decision-making capacity regarding their health and contraception, or even lead to attitudes that make them more susceptible to unwanted pregnancies [5] [8] [10] [11].

A low level of education or education limited to primary or early secondary schooling has been linked by several authors to the occurrence of teenage pregnancies [2] [3] [12]. Contrary to what is described in the literature, in this study, a significant proportion of participants, namely 72.3% of teenage mothers, had completed secondary education, and 12.3% had university education. This difference could be attributed to easier access to schools in the city of Yaoundé. However, it may also indicate that schooling alone does not ensure comprehensive sex education and is not sufficient on its own to prevent teenage pregnancies [4] [7] [8] [13].

In the study population, 50.5% of participants had no professional occupation. This aligns with data presented by the National Institute of Statistics in Yaoundé in 2020, as well as findings by several authors [2] [12] [14]. Unemployment and poverty increase vulnerability and the risk of pregnancy among teenagers, according to Smith *et al.* [14].

2. Obstetric characteristics

The majority of participants (92.71%) were primiparous, and 72.81% stated that their pregnancies were unwanted. This could be attributed to unmet family planning needs, a lack of information about contraception, and limited access to family planning services [11] [15] [16].

A history of cesarean section was reported by one-third of the participants. This high proportion of cesarean sections may be linked to a more interventionist attitude of caregivers towards adolescents, or may be explained by pelvic immaturity and associated fetopelvic disproportion [17]. The high rate of adolescents having had a cesarean section could be justified by the frequent obstetric complications occurring in adolescents, which necessitate the use of cesarean sections [12] [15].

Indeed, the rate of premature delivery was 35.92% in the study population, and 29.12% of newborns were of low birth weight (<2500 g). higher than those re-

ported by Ngowa *et al.* (2015), who reported 17.89% for both prematurity and low birth weight among infants born to adolescent mothers at Yaoundé General Hospital [15]. Despite these differences Ngowa *et al.* had already observed a significantly increased risk of preterm delivery (OR 1.94) and low birth weight (OR 1.98) among adolescents. The higher rates in our study may be due to differences in study periods, hospital settings, poorer socioeconomic and nutritional conditions, limited access to quality antenatal care, and a higher prevalence of obstetric complications. Similar trends have been reported regionally in Kenya (Muchina *et al.*, 2020) and Uganda (Okello & Katamba, 2024), highlighting that adolescent pregnancies are associated with a high risk of maternal and neonatal morbidity [15].

In this study, few adolescent mothers used male condoms, even fewer used progestin implants, and very few employed dual protection. This pattern mirrors what is described in the literature [8] [10]. The low utilization of modern contraception may be due to a lack of sexual education, limited access to contraceptives, or difficulties in negotiating their use with partners [3] [17].

In fact, contraceptive challenges may further contribute to closely spaced pregnancies; Pleasants *et al.* (2024) and Matovu *et al.* (2025) found that adolescents often rely on informal sources or joint partner decisions for contraception, limiting informed autonomy [18] [19]. These findings underscore the need for integrated interventions addressing both antenatal care and reproductive health education.

5. Study Limitations

The retrospective design of this study might lead to information bias. Limiting the study to a hospital setting may reduce the applicability of the results to wider populations. The lack of a comparative group restricts the ability to interpret associations.

Despite these limitations, this study underscores the need for a multi-sectoral action plan and diverse interventions for all adolescent girls, regardless of their level of education, to ensure they achieve optimal sexual and reproductive health.

6. Conclusion

The clinical and epidemiological profile of adolescent mothers shows a tendency for maternal and neonatal complications, a lack of empowerment during this stage of life, and an inadequate link between education level and information on sexual and reproductive health. Community analysis studies would help to more accurately identify the profile of adolescent girls related to pregnancy occurrence. Integrating all these aspects is essential to enhance the provision of reproductive health services for adolescent girls.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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