

An Overview of Adolescent Pregnancy in Yaoundé, Cameroon

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Abstract

Background: Adolescent pregnancy is high risk and every area should have data specific to it. We here attempted to determine the characteristics of adolescent pregnancy in Cameroon, with special reference to antenatal care (ANC). **Materials and Methods:** The present cross-sectional descriptive study was carried out in four secondary level hospitals in Yaounde, Cameroon from March to May 2022. Our study included adolescent pregnant females between ages 10 and 19 who received prenatal/post-partum care at these facilities. **Results:** We studied 101 adolescent pregnant females (pregnant or post-partum). The mean age was 17.6 ± 1.3 years. Most of them were single, Christian, had a secondary level of education, lived in a two-parent home and were from the Central region. ANC was provided by midwives for most of them but prenatal work-up was not done most of the time. Overall quality of ANC was considered poor. **Conclusions:** Adolescent pregnant females were mainly high-school students and lived at home with both parents. ANC quality was considered poor. These data may be important to improve reproductive health care and may be generalizable to some extent.

Keywords

Adolescent, Antenatal Care, Yaoundé

1. Introduction

According to the United Nations Children's Fund (UNICEF) the global adolescent birth rate from 2015-2020 was about 44 births per 1000 girls aged 15 to 19.

This figure peaks in regions in sub-Saharan Africa. For example, West and Central Africa, had the highest regional adolescent birth rate at 115 births per 1000 girls aged 15 to 19. The 2018 Demographic and Health Survey (DHS) in Cameroon showed that adolescent girls contribute nearly 19% to fertility. Furthermore, 24% of these adolescent girls aged 15 to 19 had already begun their reproductive life [1]. Egbe *et al.*, revealed a prevalence of adolescence pregnancy of 13.3% in the Buea Health District of the Southwest Region of Cameroon [2].

Antenatal care (ANC) is crucial for protecting the health of women/girls and their unborn children. During ANCs skilled health personnel educate women about healthy behaviors during pregnancy, discuss warning signs and childbirth, and enable women to receive social, emotional, and psychological support at this critical time in their lives. However, according to UNICEF the lowest levels of antenatal care are observed in sub-Saharan Africa and South Asia. This observation will no doubt impact the pregnant adolescent. Furthermore, because adolescents' rights are often neglected, pregnancy and motherhood frequently cause adolescent girls to give up their right to education resulting in an educational disadvantage [3].

In this study we sought to describe: 1-ANC characteristics in adolescents and 2-the educational status of pregnant adolescent girls in Yaoundé, Cameroon.

2. Methods

2.1. Study Design

This was a cross-sectional descriptive study.

2.2. Study Area

Yaoundé is the capital and second largest city in Cameroon. It covers a total surface area of 304 km². In 2019, its estimated population was 4,100,000 with 13 487 inhabitants/km².

2.3. Study Setting

The study was carried out in four the district hospitals across Yaoundé. District hospitals are secondary health facilities offering services in obstetrics and gynecology provided by obstetricians and gynecologists, midwives, and other reproductive health personnel.

We conducted a descriptive cross-sectional study with data collection from March to May 2022 at four secondary care facilities in Yaoundé: the district hospitals of Djoungolo, Cité-Verte, Biyem-Assi and Efoulan.

Our inclusion criteria were adolescent females (between ages 10 to 19) in the city of Yaoundé who received antenatal care or gave birth in the District Hospitals mentioned above during the data collection period; who were previously enrolled in school; and from whom we obtained a signed informed consent.

We excluded adolescent mothers who decided to withdraw from the study.

Our sampling was consecutive, non-exhaustive and non-probabilistic.

The minimum sample size was calculated based on the following formula applicable to descriptive studies:

$$N = Z^2 \times P \times (1 - P) / m^2$$

where

N = required sample size;

Z = 95% confidence level (typical value of 1.96);

P = Prevalence of adolescent deliveries at the Maroua Regional Hospital, *i.e.*, 26.4% [4];

m = 10% margin of error (typical value 0.10).

Our minimal sample size was calculated as follows: $N = 1.962 \times 0.19 \times (1 - 0.19) / 0.102 = 74.6$ or 75 adolescent mothers.

2.4. Procedure

After administrative and ethical clearance, we identified potential candidates during routine ANC and maternity ward rounds. Adolescents meeting our inclusion criteria were approached and included in our study after obtaining their signed informed consent. We used a questionnaire pre-designed by our authors that included the following sociodemographic variables: age; educational level; type of educational establishment attended (secondary or other); marital status (unmarried, cohabiting, married); region of origin and religion; details on pregnancy follow-up including the following: gestational age at time of the survey; sources of financing for ANC; number of ANC contacts; gestational age at onset of ANC; qualification of the ANC practitioner (obstetrician-gynecologist, midwife), prophylaxes received: antimalarial (number of intermittent presumptive treatment = IPT), anti-anemia and anti-tetanus vaccine (number of doses of tetanus vaccine (VAT) received); infectious workup (hepatitis B, HIV, Syphilis, Rubella and Toxoplasmosis); number of ultrasounds done and pathologies during pregnancy.

2.5. Statistical Analysis

Data collected were analyzed using SPSS version 23.0 software. Categorical variables were expressed as counts and proportions. Quantitative variables were expressed using the mean depending on whether the variables followed a normal Gaussian distribution.

2.6. Ethical Considerations

We received a written and signed informed consent from all study subjects. We also obtained ethical clearance and research authorization from all institutions involved.

3. Results

3.1. Sociodemographic Characteristics

Age, marital status, region of origin, religion, and family typology.

The mean age was 17.6 ± 1.3 years, with extremes of 14 and 19 years. Majority of the girls were aged 18 years (32.7%), single (79.2%), originated from the Center region (42.6%) and Christian (77.2%) (**Table 1**).

Figure 1 shows different family typologies of adolescent mothers. They lived in two-parent, single parent, blended families, alone or with author of pregnancy. Most girls with in two-parent homes (62/101).

3.2. Type of Educational Establishment Attended by the Study Population

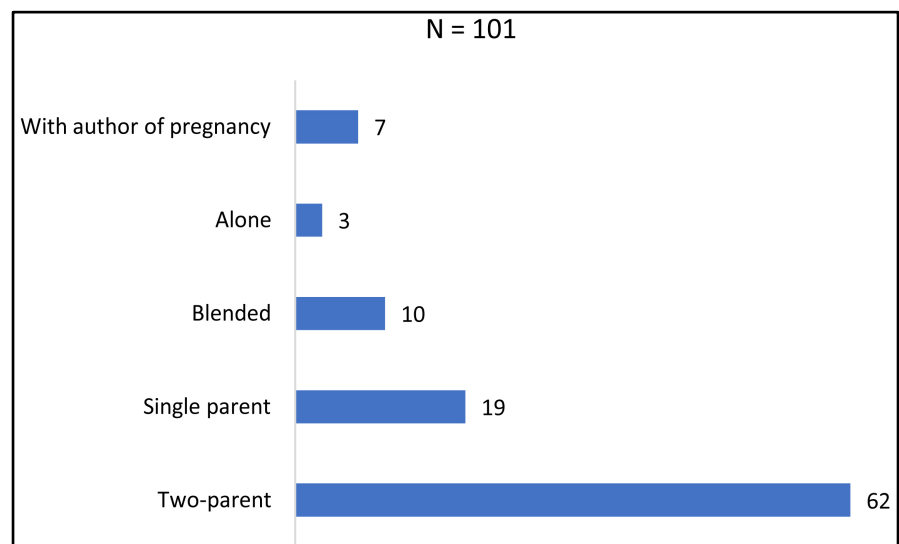
Most of the adolescent girls attended public institutions *i.e.*, 62.4% of cases. Secondary education was most represented (96.0%), and most were from the French-speaking section (80.2%). Most were in lower sixth (1st year of high school) *i.e.*, 40.6% of cases (**Table 2**).

Table 1. Distribution of the population according to age, marital status, region of origin and religion.

Variables	Numbers (N = 101)	Percentage (%)
Age (in years)		
14	1	1.0
15	9	8.9
16	10	9.9
17	21	20.8
18	33	32.7
19	27	26.7
Marital status		
Single	80	79.2
Cohabitation	12	11.9
Married	9	8.9
Region of origin		
Center	43	42.6
West	12	11.8
South	11	10.9
Far North	10	9.9
East	7	6.9
Littoral	7	6.9
Adamawa	5	5.0
North	4	4.0
Northwest	2	2.0
Religion		
Christian	78	77.2
Muslim	20	19.8
Animist	1	1.0
Atheist	2	2.0

Table 2. Distribution based on type of school attended.

Variables	Numbers (N = 101)	Percentage (%)
Type of institution attended		
Public	63	62.4
Secular private	33	32.6
Denominational private	5	5.0
Type of secondary education		
General education	97	96.0
Vocational education	4	4.0
Section		
French-speaking	81	80.2
Anglophone	11	10.9
Bilingue	9	8.9
Classe fréquentée		
Terminale	14	13.9
Première	41	40.6
Seconde	28	27.7
3 ^e me	16	15.8
4 ^e me	2	2.0

**Figure 1.** Study population distribution according to family typology.

3.3. Details of ANCs

3.3.1. Status during Study Period

Most of the adolescent mothers were pregnant during the study, *i.e.*, 91.1% of cases versus 8.9% who delivered at a gestational age ≥ 37 weeks. The mean gestational age at the time of the survey was 29.6 ± 6.4 weeks, and abortions and deliveries occurred between 18 and 40 weeks, respectively (**Table 3**).

Table 3. Distribution of girls according to status (pregnant or delivered) and gestational age at the time of abortion or delivery.

Variables	Numbers (N = 101)	Percentage (%)
Status		
Pregnant	92	91.1
Post-partum	9	8.9
Gestational age (weeks)		
18 - 20	11	10.9
21 - 24	15	14.9
25 - 27	6	5.9
28 - 31	27	26.7
32 - 36	23	22.8
≥37	19	18.8

3.3.2. Quality of ANC

- Burden of ANC costs

The author of the pregnancy financed ANC in most cases (59.4%) (Table 4).

- Characteristics of ANC attendance

Most had 2 ANCs, *i.e.*, 46.5%. The mean number of ANCs attended was 2.6 ± 0.9 , with extremes of 1 to 6 ANCs. The average gestational age at first ANC was 13.1 ± 5.5 weeks gestation, with extremes being 6- and 34-weeks gestation. Most attended their first ANC at ≤ 12 weeks gestation, *i.e.*, 58.4%. Female and male midwives were the most cited as ANC providers (67.3%) (Table 5).

- Preventive measures during ANC

The frequency of anti-anemic use, mechanical anti-malarial measures (use insecticide impregnated bed nets), and anti-tetanus prophylaxis was 93.1%, 88.1% and 67.3%, respectively. We also investigated intermittent presumptive treatment (IPT) for malaria in pregnancy. Most girls received two doses of IPT (39.6%), the average being 1.8 ± 0.9 IPT received, with extremes of 0 and 4 doses of IPT received (Table 6).

- Infectious workup

Only 9.9% of adolescent mothers had completely carried out infectious assessments prescribed at ANC. The main labs done were HIV screening tests (92.1%), toxoplasmosis (62.4%) and chlamydia (55.4%) (Table 7).

- Obstetrical ultrasound scans done

Most of the adolescent mothers had done only one obstetric ultrasound (66.3%). The average number of ultrasounds done was 1.3 ± 0.6 , with extremes of 0 to 3 ultrasound scans (Table 8).

- Pathologies in pregnancy

The frequency of pathologies in pregnancy was 15.8%. Malaria was most common (12.9%). The others found (urinary tract and cervical infections) were treated prior to our study (Table 9).

Table 4. Distribution of girls according to source of financing for ANC (N = 101).

Source of financing for ANCs	Numbers (N = 101)	Percentage (%)
Pregnancy author	60	59.4
Family	35	34.7
Family/pregnancy author	6	5.9

Table 5. Characteristics of ANC attendance.

Variables	Numbers (N = 101)	Percentage (%)
Number of ANCs attended		
1	5	5.0
2	47	46.5
3	32	31.7
4	14	13.9
5	2	2.0
6	1	1.0
Gestational age at 1st ANC		
≤12	59	58.4
13 - 16	19	18.8
17 - 24	19	18.8
25 - 27	2	2.0
≥28	2	2.0
Qualification of ANC provider		
Female or male midwife	68	67.3
Obstetrician/gynecologist	33	32.7

Table 6. Characteristics of ANC attendance.

Prophylaxis	Numbers (N = 101)	Percentage (%)
Anti-anemia	94	93.1
Use of insecticide impregnated bed nets	89	88.1
Anti-tetanus vaccination	68	67.3
Intermittent presumptive treatment		
0	5	5.0
1	36	35.6
2	40	39.6
3	14	13.9
4	6	5.9

Table 7. Distribution according to infectious workup carried out.

Variables	Numbers (N = 101)	Percentage (%)
Infectious workup done		
Complete	10	9.9
Partial	84	83.2
None	7	6.9
Type of workup		
HIV serology	93	92.1
Toxoplasmosis	63	62.4
Chlamydia	56	55.4
Hepatitis B	31	30.7
Rubella	19	18.8

Table 8. Distribution based on number of obstetric ultrasounds done.

Number of ultrasounds	Numbers (N = 101)	Percentage (%)
0	6	5.9
1	67	66.3
2	25	24.8
3	3	3.0

Table 9. Distribution based on pathologies in pregnancy.

Variables	Numbers (N = 101)	Percentage (%)
Pathologies in pregnancy		
Yes	16	15.8
No	85	84.2
Types of pathologies noted		
Malaria	13	12.9
Urinary tract infection	2	2.0
Cervical infection	1	1.0

- Quality of ANCs received

Figure 2 shows that the quality of ANC the adolescent mothers received. In 83% and 18% cases the quality was poor and good, respectively.

4. Discussion

In our study, the average age of adolescent mothers was 17.6 ± 1.3 years, with youngest and oldest being 14 and 19 years old, respectively. Majority of our study subjects were in the 17 to 19 years age range, giving a cumulative percentage of 80.2% with a preponderance of 18-year-olds (32.7%). Our results are

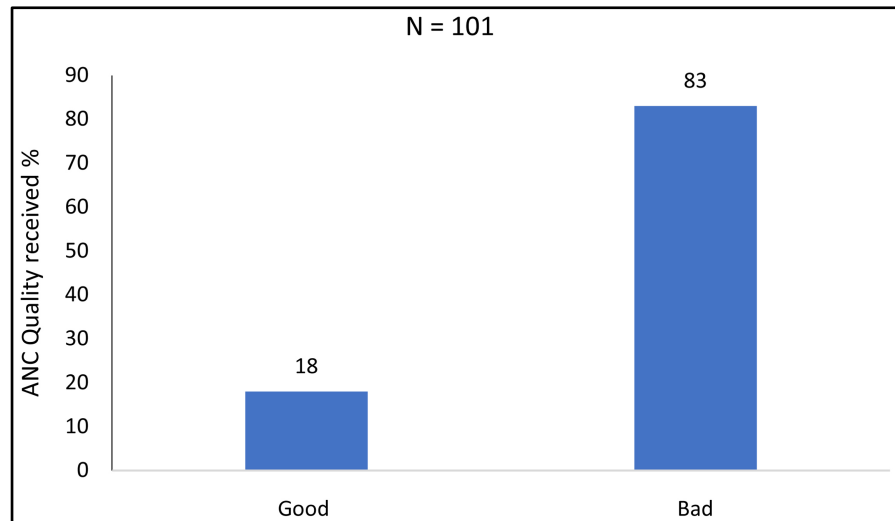


Figure 2. Quality of ANCs received.

consistent with those of Tebeu *et al.* in 2002 and 2006 in Yaoundé and Maroua, respectively, which showed a predominance of adolescent mothers ages 17 to 19 years at 60% and 71%, respectively [4] [5]. The majority of adolescent mothers over 15 compared to those under 15 is explained by the fact that reproductive life increases with age, from 4% at 15% to 49% at 19 [6]. Similarly, Luhete *et al.* in Congo in 2017 found an average age similar to ours of 17.6 ± 1.2 years [7].

Most adolescents in our study were single (79.2%). Our results differ from those of Tebeu *et al.* in Maroua and those of Luhete *et al.* in the Congo who found a preponderance of married adolescent mothers [4] [7]. This difference could be explained by the fact that the study by Tebeu *et al.* was conducted in a Muslim community where early marriage is encouraged. The Congolese study carried out in the town of Lubumbashi reported that schooling for young girls was half as frequent as for boys, which tended to encourage teenage marriages.

Most females in our study were from the Center region (42.6%). This could be explained by the fact that our study was conducted in the Center region. The ethnic groups of this region have more liberal views on sexual practices, and premarital pregnancy regardless of age is frequently perceived as proof of the girl's fecundability [8].

Most of our subjects lived in a two-parent home (62/101). Our results were corroborated by those of the 2018 demographic health survey (DHS) in Cameroon, which found that 60% of adolescents live with both parents [1]. Most studied in public establishments (62.4%) of general education (96.0%). In Cameroon Tsala reported that general secondary education represented 63.7% of all educational establishments [9], which could explain our results. Public establishments are cheaper, therefore more affordable compared to private establishments, thereby explaining the preponderance of the public sector education in our study. Most adolescents in our study were in lower sixth (high school) (40.6%). We reported a mean age of 17 years. The corresponding age to class in Cameroon, as

in many countries, would be between 16 and 17 years [10].

Early ANC attendance by adolescents was at 58.4%. This figure exceeds those of 2018 DHS for Cameroon which cites early ANC attendance at 41% [11]. This could be because the adolescents lived at home and as such could depend on financial support from parents. However, ANC attendance was financed mainly by the author of the pregnancy (59.4%). Midwives were the most represented antenatal care providers (67.3%) probably because it costs more to consult obstetricians/gynecologists. We noted pathologies in pregnancy in 15.8% of cases, predominantly malaria (81.3%). This could be explained by the fact that Cameroon is in an endemic zone for malaria, and the prevalence of the disease is still elevated despite the use of preventive measures. The quality of ANCs received was poor in most cases (82.2%). This could be explained by the fact that our patients were secondary school students without income. To attend ANCs, they would have to be absent from classes and this would not always be feasible. In addition, the partial or total lack of laboratory examinations noted (83.2%) testifies to limited financial resources, hence the poor quality of the ANCs observed in these mothers.

5. Study Limitations

- The insufficient number of women giving birth and not returning for post-natal care did not allow us to assess the late outcomes.
- The lack of socioeconomic information of the family and parents.

6. Conclusion

Teenage mothers are likely to be in their late teen years. They most often live in two-parent homes. ANC attendance is relatively low, and incomplete of prenatal workup is common likely due to financial constraints. Malaria is the most common pathology in pregnancy which is likely a reflection of endemicity.

Conflicts of Interest

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

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