

The Epidemiologic and Maternal and Fetal Prognosis of Teenage Girls

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Abstract

Objective: To identify the epidemiologic profile of the teenage mother; determine the frequency of teenage deliveries at CHME/Monkole; identify the most common obstetric complications during childbirth in adolescents; and evaluate the maternal and fetal prognosis of teenage birth in our environment. **Methods:** We conducted a descriptive study with a retrospective approach using records of teenage births admitted to the CHME/Monkole maternity between January 1, 2016 and December 31, 2017. **Results:** The overall rate of teenage delivery was 3.9%. 2016 saw a high rate of 55.2%. The average age was 18.2 years old, and the age group 17 - 19 was the most affected. The commune of Mont-Ngafula had registered more cases than the other communes with 56.7%. The majority of teenage girls who gave birth were primigravida (91%). Urogenital infection was the most common pathology observed during antenatal care (ANC) visits in teenage pregnancies (25.4%). Fetal-pelvic disproportion and water loss were the most common reasons for transfer, 15% each. Most pregnancies were completed (73.1%). The delivery was eutocic in 55.2% of cases. The tearing of the soft tissues was the most encountered complication (7.5%). Most newborns (83.6%) had not received neonatal resuscitation in the delivery room. One case of maternal death was registered (1.5%), and two cases of neonatal deaths were noted (3%). **Conclusion:** Teenage pregnancy is a risk factor for childbirth. The most important risk is presented by a caesarean section following a bony pelvic dystocia and the tearing of the soft tissues during eutocic delivery. Educating young people about family planning remains important to prevent early pregnancies and thus promote girls' schooling.

Keywords

Childbirth, Teenage Girls, Caesarean Section

1. Introduction

The adolescent birth rate is referred to as the age-specific fertility rate for women aged 15 to 19 years old.

Adolescent birth in the world and especially in poor and low-income countries remains a real public health problem because it has multiple consequences not only in the life of the adolescent mother, her child but also in society.

The situation remains alarming in the Democratic Republic of Congo (DRC) where most of the population is poor. It is, however, necessary to note that some traditions and customs, as well as degrading socio-economic conditions, favor early marriage among adolescent girls, sometimes resulting in unwanted teenage pregnancies.

According to the World Health Organization (WHO), nearly 16 million girls aged 15 - 19 give birth each year, and most of them in low- and middle-income countries. Complications from pregnancy and childbirth are the second leading cause of death among girls aged 15 to 19 years. Children of teenage mothers have a significantly higher mortality risk than those of women aged 20 to 24. According to the same organization, teenage pregnancy remains one of the major contributors to maternal and child mortality and contributes to the cycle of poor health and poverty [1].

According to the United Nations Population Fund (UNFPA), a girl's pregnancy can change her life. She may be forced to drop out of school, which contributes to reducing her job prospects. She also becomes vulnerable to poverty and exclusion. Her health may also be affected: pregnancy and childbirth-related complications are one of the leading causes of death among teenage girls [2].

The drama of teenage mothers is lived differently in the world. This fact is closely linked to socio-economic conditions, accessibility or not to health services as well as to certain traditions and cultures of the region where the young teenage girl is from. The situation is still dire in poor countries where young adolescent girls are exposed to early marriages or enter into common-law relationships; and as a result, a marked increase in the number of teenage mothers. According to the WHO, in some societies young girls get married and start a family before the end of their own childhood. In other countries, most deliveries of young mothers take place outside of marriage, where there is a high rate of adolescent sexual activity, in some cases forced, or related to poverty and social exclusion [3].

The risks to the health of the mother and the baby are strongly associated with childbirth at an early age. The risk of dying from a birth-related harm is 2 times higher for adolescent girls aged 15 to 19 than for young women of older age; this is due to a variety of factors including first pregnancy, poverty, low social status and lack of access to health services [4]-[28].

What about our country, DRC, or even all around us? A question that is obviously worth asking, given a glaring lack of studies on this subject that seems to maintain the cycle of poverty in our environment.

Thus, our study has set as a general objective to draw up the epidemiologic and clinical profile of teenage delivery at the Mother and Child Hospital Center/Monkole during the period going from January 1st, 2016 to December 31st, 2017.

As specific objectives:

- ✓ Determine the rate of teenage delivery at CHME/Monkole;
- ✓ Identify the most common obstetric complications encountered during adolescent childbirth;
- ✓ Evaluate the maternal and fetal prognosis of adolescent childbirth.

2. Patients and Methods

We conducted a descriptive study with a retrospective approach using records of teenage births admitted to CHME/Monkole maternity between January 1, 2016 and December 31, 2017.

Included in the study were women who met the following conditions:

- ✓ Having given birth at the maternity center of the Mother and Child Hospital Center/Monkole during the study period,
- ✓ Being 13 to 19 years old,
- ✓ Have a file containing our variables of interest.

All deliveries outside this criterion were excluded from the study.

We collected our data from maternity records, maternal records, and the CHME/Monkole computerized database.

The variables of interest collected were age, year, mode of admission, reason for transfer, marital status, obstetrical history, age of pregnancy at delivery, mode of delivery, newborn weight, the Apgar score, and neonatal resuscitation in the delivery room.

The descriptive statistics were used to calculate the means for quantitative data and the percentage for qualitative data.

3. Results

During our study period we identified 67 teen births out of a total of 1697 births, a rate of 3.9%.

Table 1 shows that the age group of 17 - 19 years was the most concerned in our study. The average age was 18.2 years with a standard deviation of 1.1, an age variation between 17.1 and 19.3 years.

The year 2016 had more cases with 37 (55.2%) against 30 (44.8%) for the year 2017 (**Table 2**).

We note that 70.2% had come to the hospital on their own (**Table 3**).

Table 4 shows that water loss and fetopelvic disproportion were the most common reasons for transfer.

Table 5 shows that 82.1% of teenage girls who gave birth were single.

We note in **Table 6** that 91% of adolescent girls were primigravida.

We find that, of 67 teenage girls admitted to our series, only 28.4% of teenage girls had a normal-looking ANC (**Table 7**).

Table 1. Age distribution of women.

Age (year)	n	%
14 - 16	6	9
17 - 19	61	91
Total	67	100

Table 2. Distribution of women by year.

Year	n	%
2016	37	55.2
2017	30	44.8
Total	67	100

Table 3. Distribution of women based on the mode of admission.

Mode of admission	n	%
Came by themselves	47	70.2
Transferred	20	29.8
Total	67	100

Table 4. Distribution of women based on the reason of transfer.

Reason of transfer	n	%
Waterloss	3	15
Fetopelvic disproportion	3	15
Eclampsia	1	5
Hypertension	2	10
Non-tolerated anemia	2	10
Prematurity	1	5
Stationary labor	2	10
Head to the vulva	1	5
Prolonged pregnancy	1	5
Rape	1	5
Without transfer notes	3	15
Total	20	100

Table 5. Marital status.

Marital status	n	%
Single	55	82.1
Married	12	17.9
Total	67	100

We note from this table that 73.1% of adolescents had carried their pregnancies to term and we recorded 22.4% of preterm deliveries (**Table 8**).

Most teenage girls (55.2%) had delivered vaginally. However, the rate of caesarean section in our series (44.8%) is not to neglect (**Table 9**).

It appears from **Table 10** that 7.5% of adolescents had tearing of soft tissues.

Table 11 shows that 98.5% of teenage girls gave birth came out alive.

Most children (70.1%) had a weight between 2500 and 3500 g (**Table 12**).

Table 13 shows that 86.5% of newborns had an APGAR score > 7.

Table 14 shows that 16.4% of newborns received neonatal resuscitation in the delivery room.

Of a total of 67 births recorded 2 newborns were stillborn (3%) compared to 65 (97%) that were alive (**Table 15**).

Table 6. Distribution of women based on their obstetrical antecedents.

Antecedents	n	%
Primigravida	61	91
Multigravida	6	9
Total	67	100

Table 7. Distribution of deliveries according to pathologies that occurred during pregnancy.

Pathologies (ANC)	n	%
Anemia	5	7.5
Urogenital infection	17	25.4
Hypertension	3	4.5
Threat of premature delivery	5	7.5
Paludism	13	19.5
PROM	5	7.5
None	19	28.4
Total	67	100

PROM: premature rupture of the membranes.

Table 8. Distribution of deliveries by age of pregnancy at delivery.

Age	n	%
28 - 37 LMP	15	22.4
37 - 42 LMP	49	73.1
>42 LMP	3	4.5
Total	67	100

Table 9. Distribution of teenage girls based on the mode of delivery.

Mode of delivery	n	%
Vaginal delivery	37	55.2
Abdominal delivery	30	44.8
Total	67	100

Table 10. Distribution of deliveries based on complications.

Complications	n	%
Antenatal haemorrhage	2	3.0
Postpartum haemorrhage	4	6.0
Tearing of soft tissues	5	7.5
No complication	56	83.5
Total	67	100

Table 11. Distribution of births by maternal evolution.

Women	N	%
Cured	66	98.5
Death	1	1.5
Total	67	100

Table 12. Distribution by birth weight.

Weight	N	%
<2500 g	15	22.4
2500 - 3500 g	47	70.1
3500 - 4000 g	4	6.0
>4000 g	1	1.5
Total	67	100

Table 13. Apgar score at the 10th minute.

Apgar score at 10 th minute	n	%
<3	3	4.5
4 - 7	6	9.0
>7	58	86.5
Total	67	100

Table 14. Distribution of newborns based on the need for resuscitation.

Newborns	n	%
Resuscitated	11	16.4
Not resuscitated	56	83.6
Total	67	100

Table 15. Distribution of cases by status of newborns at birth.

Newborns	n	%
Alive	65	97.0
Stillbirths	2	3.0
Total	67	100

4. Discussion

In our series, 67 cases out of a total of 1697 births registered at CHME/Monkole maternity hospital were teenage births, yielding a rate of 3.9%. The year 2016 saw a high frequency of deliveries in adolescents (56%) than 2017. This decreasing rate is influenced by several awareness campaigns on the prevention of early pregnancy and their consequences for adolescents' reproductive health organized by international organizations and the government, although this is not yet a won bet [29].

It is important to note, however, that adolescent studies pose age-limit problems according to the authors [23]. For some, the upper limit is 16 years, for others 18, 19 or even 20 years. This makes comparisons relatively difficult. In our study, we considered the limits ranging from 13 to 19 years old.

Our results are different from those of a study by Mbemba Moutounou [30], from the Brazzaville University Hospital, on pregnancy and adolescent childbirth in Congo where the frequency was 5.3% with an average age of 14 and 15 years. Another study, conducted in Lubumbashi, by Prosper Kakudji Luhete [31] found a frequency of 7.7%. This could be explained by the less frequent use of contraception by the adolescent population; the precocity of sexual relations and early marriage (24% before the age of 15), the low level of education as well as the low level of education on sexuality.

The average age of adolescents giving birth at the Monkole maternity hospital was 18.2 years with a standard deviation of 1.1 years, which is a variation of age between 17.1 and 19.3 years. However, the age group of 17 - 19 is the most represented with 91% as can be noted in **Table 1**.

Our results are close to those of a study conducted in France in 2014 in the Department of Gynecology and Obstetrics at the Seine-Saint-Denis Hospital on the obstetrical and neonatal outcome of teenage pregnancies. In this study, Debras and Carbillon [18] found that the average age was 16.7 years, the most affected age group was between 17 - 19 years (86%).

We noted in our study that 70.2% of adolescent girls who gave birth at CHME/Monkole came to consult by themselves while only 29.8% of adolescent girls were transferred [32].

We note in **Table 4** that water loss and fetopelvic disproportion were the most common reasons for transfer, 15% each. Hypertension, not-tolerated anemia, and stationary labor accounted for 10% each. For other reasons, eclampsia, and prolonged pregnancy accounted for 5% of cases each.

We noted in our study that 82.1% of adolescent girls who gave birth were single compared to only 17.9% of married ones.

Our results are different from those found by Hamada *et al.* [33] in a study conducted at the Rabat Oranger Maternity in Morocco in 2004 on pregnancy and childbirth where a lower rate of unmarried adolescents was found (9.4%). This situation could be explained by the fact that in Islamized societies girls are married very early, especially in rural areas, to preserve the virginity of girls.

In our study, 91% of adolescent girls were primigravida.

Our results are in agreement with those presented by Hamada *et al.* [33], in a study in Morocco, where 10% of teenage girls were multigravida.

We noted that 25.4% of cases had urogenital infections during their ANC, followed by 19.5% of malaria and 7.5% of cases respectively for PROM, threat of premature delivery and anemia. Hypertension on pregnancy accounted for only 4.5% of cases and in 28.5% of cases pregnancy evolved normally. The high rate of urogenital infections could be explained by the hormonal action on the urinary tract but also by the pregnancy itself, which is one of the causes of the decrease of immunity in women [34].

In the literature, we find an anemia rate ranging from 11.1% for Osbourne to 34.9% for Konje. The urinary tract infection ranges from 5.9% according to Osbourne to 21.9% according to Janky. The arterial hypertension induced by pregnancy ranges from 3.5% according to Hardy to 20% according to Vinatier [34].

The study noted that 73.1% of adolescent girls had carried their pregnancies to term, followed by 22.4% who had a premature birth, and only 4.5% exceeded the term.

Our results are close to those found by Hamada [33], where 4% of adolescent girls were overtime. These data are contrary to a study conducted in France in 2012 by Malabarey *et al.* [34] who found a significant difference between delivery before 32 LMP and 37 LMP in adolescent girls compared to older women.

Debras *et al.* [18], however, in a study conducted in France drew the conclusion that prematurity was common among adolescent girls.

In our study, we found that 55.2% of adolescent girls had a vaginal delivery and 44.8% had an abdominal delivery.

A study conducted by Eure [35] found a high risk of caesarean section in adolescents while Jolly [36] found a reduction in cesarean section and obstetric maneuvers for adolescents under 19 when they were followed in a specialized environment.

Our study shows that 7.5% of adolescent girls had soft tissue tears, 6% had postpartum hemorrhage and 83.5% of cases had no complications.

The tearing of the soft tissues is due to the narrowness of the genital tract and leads to postpartum hemorrhage [27].

Monir Islam [37], director WHO's Department of Making Pregnancy Safer, said: Teenage pregnancies have common traits, still too young, organisms are not yet fully developed and cannot endure the adverse effects of the entire process of pregnancy and childbirth, and are at an increased risk of dystocia compared to women over 20 years of age. In the absence of emergency obstetric care, this leads to uterine rupture with a high risk of mortality. Among those who survive, the prolongation of the labor is at the origin of fistulas. He found that in Ethiopia 75% of women with fistula were pregnant before the age of 20 [38].

Regarding maternal mortality, in our study only one teenager (1.5%) had died, yielding a maternal mortality rate of 1538 per 100,000 live births.

Our results are different from those found in a study conducted by Djanhan and Souk [39] on adolescent childbirth at the Yopougon Teaching Hospital in Abidjan (Ivory Coast), which reveals an adolescent maternal mortality rate of 3326 per 100,000 deliveries. This could be explained by the efforts made by the CHME to reduce as much as possible the rate of maternal mortality through the continuous training of its medical staff, and the availability of a technical platform to ensure better care for these adolescent girls.

We note in **Table 12** that 70.1% of newborns had a birth weight between 2500 - 3500 g, 22% of newborns had a birth weight lower than 2500 g, 6% had a higher weight between 3500 - 4000 g, and 1.5% had a birth weight greater than 4000 g.

Our results corroborate those of a study conducted in France in 2012 that found no significant difference between the birth weight in adolescent girls and the general population [18].

Our study shows that 86.5% of newborns had an APGAR score above 7 compared to only 4.5% with a score below 3.

It should be noted that 16.4% of newborns had received neonatal resuscitation in the delivery room and 2 (3%) of them were stillborn. This finding is similar to that found by Djanhan [39] at the Cocody University Hospital in Abidjan (Ivory Coast) in 2012, which found that 84% of newborns of adolescents were alive.

5. Conclusions

Childbirth in adolescent girls in poor, low-income countries remains a real public health problem because it has multiple risks and consequences in the life of the adolescent mother.

In our series, it represented a rate of 3.9%; and the fetopelvic disproportion and water loss were the most common reasons for transfer, exposing the parturient to caesarean section, which was close to a non-negligible rate in our study (44.8%).

The fetal prognosis was not particularly dangerous in our study, but it should be noted that 16.4% of newborns had benefited from neonatal resuscitation in the delivery room, a rate far from being negligible.

Thus, youth awareness on the need for a good family planning is of utmost importance to fight against this scourge.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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