

Obstetric, Sociodemographic, and Psychosocial Problems of Postpartum Adolescents of Huambo, Angola

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ABSTRACT: This study aims to establish a profile of teenage pregnancy (<20 years) at a hospital in Huambo, Angola. Subjects were categorized into two age groups, 10–16 and 17–19 years. We interviewed 381 mothers in the postpartum maternity ward of the Central Hospital of Huambo. Statistical analysis then followed two stages, a descriptive analysis of the study population and analysis through a bivariate 2 × 2 table, using a chi-squared test to evaluate the hypothesis of homogeneity of proportions with a significance level of 5%. Comparing the two groups revealed a more frequent occurrence of problems among mothers under 17 years of age, including a higher frequency of involvement with unemployed parents, more often not living with parents, and fewer prenatal consultations.

KEYWORDS: pregnancy, adolescence, social demography, psychosocial, obstetric conditions

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Introduction

Pregnancy in the early reproductive life in modern times has been discouraged because of possible harm to the physical, emotional, and social health of adolescents and because of potential adverse consequences for children's health. However, depending on the teenager's social context, pregnancy can be seen as normal event, accepted within their society and customs.¹

Pregnancy leads to changes that impact on women's lives, and these changes can be endocrine, somatic, or psychological. When these changes occur in adolescence, they may become more intense because of the synergy of crises common in both these life phases.^{2,3}

Although the magnitude of teenage pregnancy has been reducing in countries around the world, this situation is still worrying in Africa, where teenage pregnancies represent 35%–77% of total births.⁵

Angola has a young population of approximately 17 million inhabitants. Wealth is concentrated in certain population groups, and the country is still rated at very low levels in most global socioeconomic development and health measures. Angola is divided into 18 provinces, 164 districts, and 557 comunidades.⁶ The availability of data on health, official or published in scientific articles, is very limited. The mother

and infant and reproductive health indicators are the worst in sub-Saharan Africa.

World Health Organization (WHO) research reported in 2009 showed an infant mortality of 154/1000 live births and a fertility rate of 6.7 births per woman. However, substantial improvements were recorded in 2013, when WHO estimated a fertility rate of 6.4 births per woman and an infant mortality rate of 116/1000 live births.⁷

Underreporting of births does occur in Angola's health information system, since most births occur outside the hospital environment, often without assistance of health professionals. Considering these data, we chose to describe the mode of delivery, vaginal or cesarean, of the adolescents studied.

The aim of this study was to establish a profile of teenage pregnancy and describe factors associated with the type of delivery, vaginal or cesarean, at a referral hospital in Huambo, Angola, from February to August 2010.

Methodology

Study design. This sectional, descriptive study began with the collection of primary data. The sample consisted of 381 adolescent mothers, aged 10–19 years, who gave birth in the maternity ward of Huambo Central Hospital, Huambo, Angola. The study hospital is in the capital city of



the Huambo Province, which has a population of approximately 2,225,000 inhabitants. At-risk pregnancies are referred to Huambo Central Hospital, and the tertiary hospital is unique in the region. Its maternity unit performs an average of 36 births a day and has 17 predelivery beds and 7 postpartum beds. Women undergoing cesarean section are in the ward after surgery. In general, hospital maternity coverage in the area is low, around 30%. Medical professionals are responsible for cesarean sections and normal deliveries with some level of complication, while low-risk hospital births are attended by nurses.

Data were obtained through interviews in the postpartum period, using a structured questionnaire validated by the National School of Public Health (ENSP)–FIOCRUZ in a study of assistance to teenage pregnancy in Rio de Janeiro. Some adaptations were made for use in Africa, mainly in regard to cultural and traditional differences. A pilot study was performed with a sample of 20 mothers to evaluate the applicability of the questionnaire as well as the conditions, duration and uniformity of the interviews. Data collection was performed by trained staff in a reserved space to preserve the anonymity and privacy of the mothers. The interviews took place with the written informed consent of the legal guardians of the adolescents.

The dependent variable was the type of delivery, vaginal or cesarean. The independent variables were as follows: age postpartum, categorized into two age groups, 14–16 years, called early, and 17–19 years, called late adolescence; area of residence, urban or rural; paternal employment; and teenager's enrollment in study when she became pregnant. We defined the two age groups because, in our sample, we did not have any mothers under 14 years. Social and obstetric data were also analyzed, including whether the postpartum woman lived with the infant's father, the father's literacy status, if the father has another family (as it is common in Angola for some men to have more than one family at the same time), whether prenatal visits were attended, number of visits, <6 or ≥6, if

prenatal care started in the first, second, or third trimester of pregnancy, morbidity during pregnancy (malaria, urinary tract infection, hypertensive syndrome, anemia, bleeding, heart disease, and HIV), and whether prenatal care extended until the end of pregnancy.

Postpartum mothers aged between 10 and 19 years were considered adolescents according to the WHO guidelines.⁴ However, as mentioned earlier, the youngest mother to present during our study period was aged 14 years.

Bivariate analyses using chi-squared tests with a 5% significance level were performed to compare the adolescent mothers grouped by sociodemographic and psychosocial variables, which were collated according to maternal age and marital status. Data were processed and analyzed using the software Epi Info version 6.04b from the Centers for Disease Control and Prevention. The project was reviewed and approved by the Research Ethics Committee of the Ministry of Health of Angola and was authorized by the Huambo Central Hospital. The study was conducted according to the tenets of the Declaration of Helsinki.

Results

For this study, 381 subjects were interviewed, with 147 (38.6%) aged between 10 and 16 years and 234 (61.4%) between 17 and 19 years. In Table 1, we can see that the proportion of mothers who lived in rural areas was high in both groups, 78.2% in the early adolescent group and 70.5% in the late adolescent group. A higher percentage of the mothers in the early group had unemployed parents, 47.3%, compared to 38.0% in the older group. Unemployment of the baby's father was also more common among the younger mothers. With regard to marital status, the early adolescent group had a higher proportion not living with the child's father, 70.7%, versus 38.5% of the older group. In the older group, just 32.1% of the subjects had been enrolled in education when they became pregnant. In both groups, few respondents saw teenage pregnancy as a hindrance to their lives, only 11.6% in the younger group

Table 1. Proportion of teen mothers by sociodemographic variables, distributed by age group, assisted in Maternity Hospital Central Huambo, Angola, 2010.

SOCIODEMOGRAPHIC VARIABLES	AGE (ADOLESCENT MOTHERS)		χ^2	P-VALUE
	10–16 (%)	17–19 (%)		
Rural area	78.2	70.5	2.38	0.0606
Baby's father unemployed	47.3	38.0	3.03	0.0416
Not living with the infant's father	70.7	38.5	36.38	0.0000
Mother was studying when she became pregnant	29.9	32.1	0.10	0.3752
See pregnancy as a hindrance	11.6	15.0	0.62	0.2171
Want to work outside the home	91.2	94.9	1.47	0.1134
Baby's father has another family				
Yes	61.9	38.1	0.0015	0.4872
No	60.7	39.3		

**Table 2.** Obstetric variables, proportion of adolescent mothers, distributed by age group, assisted in Maternity Hospital, Central Huambo, Angola, February–August, 2010.

OBSTETRIC VARIABLES	AGE GROUP ADOLESCENT MOTHERS		χ^2	P-VALUE
	10 TO 16 YEARS (%)	17 TO 19 YEARS (%)		
Do not use birth control method	99.3	97.9	0.47	0.253
Less than 6 prenatal consultations	89.1	84.6	1.14	1.142
Used alcohol in pregnancy	0.7	3.8	2.41	0.053
Smoked during pregnancy	0.0	0.9	0.16	0.376
History of abortion	1.4	4.7	2.13	0.067
Cesarean	27.9	46.2	11.90	<0.001
Morbidity during pregnancy	25.2	43.6	12.44	<0.001

and 15.0% in the older group. In both groups, there was a significant percentage reporting an intention to work outside the home. The father having another family was more common among the younger group.

As shown in Table 2, the difference between the groups in terms of the reported use of contraceptive methods was not statistically significant. There was also no significant difference between groups in the number of prenatal visits, with more than 80% of subjects having fewer than six visits. Use of alcohol and smoking during pregnancy was almost zero in the early group, and use of alcohol and smoking was 3.8% and 0.9%, respectively, in the late adolescence group.

Reports of previous abortion were also low, although higher in the late adolescence group at 4.7%. Regarding the type of delivery, there was a high proportion of cesarean sections, reaching 46.2% in the older group. The late adolescent group also reported more morbidity during pregnancy, with 43.6% reporting one of the above-listed conditions, compared to 25.2% in the early group.

The desire to become pregnant was quite different between the groups. Of the younger group, 78.9% did not wish to become pregnant, compared to 41.9% in the older group. With regard to family support during pregnancy, 35.4% of the group of 10–16 years and 21.8% of the group of 17–19 years had family support. The younger group also reported higher frequency of negative reaction of the baby's father and family regarding the pregnancy, lack of support from the baby's father, and dissatisfaction with pregnancy. Reports of worsened quality of life and of physical violence during pregnancy were uncommon but more frequent in the older group.

Tables 4 and 5 present social, demographic, and obstetric variables according to the type of birth, vaginal or cesarean. Although the majority of deliveries among adolescents in the study were vaginal, incidence of cesarean section was high, 27.9% in the early teens and 46.2% in late. Living in an urban versus suburban/rural area was significantly associated with the type of delivery. Although there were a higher proportion of unemployed parents in

the vaginal delivery group, this finding was not statistically significant. In relation to educational status, we identified that those who were in school had more vaginal deliveries, compared to those who were already out of school. Among those who lived with the infant's father, 78.4% delivered vaginally, and for those who did not live with the infant's father, this value was substantially lower, at 42.8%. Proportions of each delivery type are also shown in Table 4 for pregnancies in which the baby's father could read and write, and among those in which the father had another family. Living with the infant's father was associated with vaginal delivery. We believe this was caused by increased monitoring, security, and care.

Discussion

The description of sociodemographic variables according to age of the mothers shows a less favorable situation for younger mothers, a situation repeated in several studies conducted in Brazil.^{1,9–11} In recent decades, teenage pregnancy has been much discussed, particularly the negative effects experienced in this age group, although satisfaction and positive gestational outcome are identified in most cases.^{12,13}

The prevalence of births among adolescents in Huambo Hospital was 19.3% recorded during the study is higher than that found in Brazil in the same year (2010).¹⁴ Although official figures are not available for Huambo or even Angola, it is believed that the rate of teen pregnancy found in this study may be slightly overestimated, since the data analyzed in this study are from a reference hospital for high-risk pregnancies. On other continents, especially in developed countries, teenage pregnancy rates are around 1%–5%, with some variations: the Netherlands (0.9%), Israel (2.3%), USA (12.8%), and Russia (13.0%).^{15,16} On the other hand, in some African countries, such as Mozambique, Zimbabwe, Malawi, South Africa, and Swaziland, these values are much higher than those found in this study, reaching rates of around 65% of births in adolescent women.¹⁷

More than a third of adolescent mothers who gave birth in the maternity ward of Central Hospital, Huambo, Angola,



Table 3. Psychosocial variables among adolescent mothers, assisted in Maternity Hospital Central Huambo, Angola, 2010, distributed by age group.

PSYCHOSOCIAL VARIABLE	AGE GROUP ADOLESCENT MOTHERS		χ^2	P-VALUE
	EARLY (%)	LATE (%)		
Did not desire the pregnancy	78.9	41.9	48.80	<0.001
Did not feel supported by her family	35.4	21.8	7.77	0.002
Negative reaction from baby's father	61.2	18.8	69.41	<0.001
Negative family reactions	61.2	42.7	11.62	<0.001
Did not feel supported by the father of the baby	17.0	10.7	2.64	0.5333
Dissatisfaction with pregnancy	61.9	27.4	43.25	<0.001
Believes the baby will worsen her life	11.6	15.0	0.62	0.217
Victim of physical abuse during pregnancy	4.1	6.4	0.55	0.232
Total (N)	147	234		381

were in the age group 10–16 years. Despite the magnitude, this figure is also lower than that found in some African countries, including Mozambique, Zimbabwe, Malawi, South Africa, and Swaziland.¹⁷ The difference in pregnancy rates in adolescence among African people can be related to a sociocultural bias. According to Altuna, although most of the African peoples are of Bantu origin and retain many traditional aspects of their cultures, Angolans are considered more moderate than the people who live in the northeast of Africa, whose

Table 4. Proportion of adolescent mothers, according to sociodemographic variables, distributed by the type of birth, assisted in Maternity Hospital Central Huambo, Angola, 2010.

SOCIODEMOGRAPHIC VARIABLES	TYPE OF DELIVERY		χ^2	P-VALUE
	VAGINAL (%)	CESAREAN (%)		
Maternal age				
10–16 years	72.1	27.9	11.8896	<0.001
17–19 years	53.8	46.2		
Residence				
Urban area	58.4	41.6	0.2266	0.315
Rural area	61.8	38.2		
Father of the baby employed				
Yes	57.7	42.3	2.0232	0.077
No	65.4	34.6		
Was studying when she got pregnant				
No	46.2	53.8	14.7640	<0.001
Yes	67.6	32.4		
Lives with the infant's father				
No	42.8	57.2	49.1063	<0.001
Yes	78.4	21.6		
Father of the infant reads and writes				
No	60.1	39.9	0.2275	0.3181
Yes	63.6	36.4		

population has a higher rate of teenage pregnancy.¹⁸ Other factors also seem to affect pregnancy rates in adolescence, such as polygamy, early marriages dictated by the appearance of menarche, arranged marriages according to family wishes, and social interests.¹⁸

A study by Sabroza et al evaluated 1228 adolescent mothers whose deliveries occurred in the city of Rio de Janeiro from 1999 to 2001, in public and private hospitals, and found that less than a third of the teens were younger than 17 years.¹⁸ It is thought that fluctuations in the rates of pregnancy in early or late adolescence vary by region due to the migration of young

Table 5. Ratio of adolescent mothers, according to obstetric variables, distributed by the type of birth, assisted in Maternity Hospital Central Huambo, Angola, 2010.

OBSTETRIC VARIABLES	TYPE OF DELIVERY		χ^2	P-VALUE
	VAGINAL (%)	CESAREAN (%)		
Did prenatal consultations				
No	30.0	70.0	11.6801	<0.001
Yes	63.5	36.5		
Number of prenatal consultations				
<6 consultations	63.8	36.2	0.0138	0.449
≥6 consultations	61.7	38.3		
Start of prenatal consultations				
1° trimester	64.6	35.4	0.1723	0.917
2° trimester	62.6	37.4		
3° trimester	66.7	33.3		
Morbidities in pregnancy				
Yes	46.8	53.2	17.4250	<0.001
No	69.0	31.0		
Prenatal care until the end of pregnancy				
No	69.2	30.8	0.8364	0.180
Yes	62.2	37.8		



people, especially the poor who are in search of places with better living conditions. One survey found that most adolescent mothers interviewed lived in suburban areas, suggesting that the event may be related to the degree of urbanization of a city. In those areas, marriages are often made as early as possible, due to the prevalence of early marriage as a traditional and cultural practice, low levels of education, poverty, and low social status.^{1,18} In Brazil, Duarte et al¹⁹ conducted a cross-sectional study of adolescents who had infant while living in Santo André, SP, concluding that the sexual and reproductive patterns vary according to different factors, including the place of residence, pointing out that the phenomenon is more checked in rural areas. Studies by Necchi¹ and Bennett et al²⁰ also found that the higher incidence of teenage pregnancy is checked in rural areas. Probably in these areas, in relation to Africa, people have less education, little access to information, and are more conservative, although there are many stories of teenage pregnancy in their predecessors.¹¹ Also, a bibliographic review by Vitale and Amancio⁹ confirmed that in rural areas, home to more disadvantaged populations, the prevalence of teenage pregnancy is higher than in urban areas. Similarly, Chalem et al¹⁰ observed concordant results when studying teenage pregnancy in a population on the outskirts of Sao Paulo, Brazil.

In this study, there was a higher proportion of unemployment in the baby's parents among adolescents under 17 years of age. Probably this was because they are young and still enrolled in education, in accordance with the demands of their parents. Similar results were found by Sabroza et al,⁸ in an evaluation of some emotional repercussions of early pregnancy in adolescents in Rio de Janeiro; high unemployment rates were found among the fathers of babies born to mothers aged under 17 years. However, the proportion of the teen mothers whose parents were without paid work was very low, which may be linked to the need to support the family, even if it is in the informal market. However, a contrary situation was found when analyzing whether the father of the infant lived with the teen mother, with a higher proportion of younger adolescents not living with their parents.

A study by Gama et al²¹ in the city of Rio de Janeiro, Brazil, investigating the experience of pregnancy in adolescence, associated factors, and perinatal outcomes among low-income mothers, found that a third of adolescents were not living with the infant's father.

Training is seen as a mean to achieve professional fulfillment, which is considered the gateway to changing one's quality of life.^{11,22,23} Age did not influence involvement in education, with a distribution with no statistical difference between the two groups. This is most likely because both age groups experienced the same need to attend to present survival above future goals, so most needed to work in the informal market, in the fields or with livestock.

Although both groups of adolescents in this study included high proportions of mothers who were not studying, this was less so in the younger group, demonstrating that studying is a characteristic of this age in Angola, where the

parents require their children to study. This is in contrast to the results found by Sabroza et al,⁸ in which more than half of the study group was not studying at the time of pregnancy.

For a pregnant adolescent, living with the baby's father or not influences legal status, as well as pregnancy outcome, perception, emotional status, and the perceptions of family and friends. In this study, half of the adolescent mothers were living with their child's father. This is similar to the results of a study by Chalem et al,¹⁰ who evaluated teenage pregnancy by sociodemographic and behavioral profiles in a population on the outskirts of Sao Paulo, Brazil. The study found that more than half of the teenage parents lived in common-law marriages.¹⁰ Probably in these areas, people marry early and highly value the woman who lives with her partner.

Seeing pregnancy as a hindrance was not much reported in either group in this study. However, almost all subjects showed great interest in working, which seems to be a manifestation of seeking to improve the quality of life in order to take better care of one's descendents.

The use of contraceptive methods by the adolescents was very low in both groups. It is likely that many were unaware of their existence. Their availability is limited, the amount of training and education is low, and accessibility is limited.²² In many countries, basic forms of the contraceptive methods are distributed by the health services in the basic units, but the teenagers almost often do not use these methods.⁸ Similarly, Carvalho assessed the socioeconomic aspects of the teenage pregnancy in Goiás, Brazil, and found that half of those studied reported using some method of contraception. In Africa, the use of contraception is low, as shown by Gabi, 6% in Angola, 14% in Malawi, and 12% in Mozambique in 2013.²⁴

It is recommended that prenatal care should include psychological assistance, preparation for motherhood, and instruction regarding childbirth, childcare, postpartum nutrition, use of drugs, and other matters relevant to the fetus or newborn. Pregnant teenagers commonly attend fewer prenatal consultations.²² WHO recommends attending at least six prenatal visits during gestation.²⁵ In this survey, most of the teenagers had fewer than six, regardless of age, probably because many have changed their lifestyle and are living in rural areas with limited access to health services due to the distance between their homes and the unit. This result is similar to those of Gama in Rio de Janeiro.^{22,25}

There is no significant statistical difference between the two groups because 89.1% of the younger group (10–16) and 84.6% of the older group had less than six consultations. We found low use of alcoholic beverages and tobacco among our study group, which is a good thing because they disrupt fetal growth and development, contribute to preterm labor, and premature separation of the membranes, chronic inflammation, and cardiovascular diseases.²⁶

Analyzing the history of abortion in our sample, we found that it was reported in a very small proportion of cases, even lower in the younger group. These data show that teenagers'



access to information about contraception is subject to religious influences. In an epidemiological study with adolescents, conducted in the city of Rio de Janeiro, Vieira et al²⁷ observed that one of the attitudes that early adolescents adopt when faced with unplanned pregnancies is to seek out an abortion, which increased the proportion of abortion in this age group in that study. Diniz²⁸ notes that although it is considered as a crime, abortion is common in the Brazilian population. Interviews of women hospitalized for complications of abortion show that most are young, poor, and already have children. Although studies show the growth of cesarean sections without medical indication in several countries,²⁹ it is assumed that, in Africa, this type of delivery is being done due to risk in the pregnancy. A hospital study includes a higher proportion of at-risk births, because most births occur outside the hospital.

There was a high rate of cesarean births, supported by the literature and justified by body immaturity in adolescence.³⁰ The high rate of cesarean births may also be linked to the fact that many Angolan women go to the hospital later during labor. High rates of cesarean sections have also been observed in pregnant women with few prenatal consultations, according to results found in studies by Scholl, Diallo, and Michelazo.^{31–33} Of all deliveries in Brazil, almost half are by cesarean section,³⁴ which is high when compared to other countries. For example, the United States recorded 23.5% of births by cesarean in adults and 13.8% among adolescents; in Hong Kong, these rates were 12.6% and 4.1%, respectively.¹⁵

The occurrence of diseases during pregnancy was higher in the older group, although it was expected that we would find more morbidity in the younger group. Mothers in the younger group more frequently reported that they had not desired their pregnancies and that they were dissatisfied with pregnancy. This was probably because these younger teenagers had not expected to become pregnant, and because they often did not live with the child's father, their lives became more difficult. Similar results were found by Abreu, when assessing the obstetric, sociodemographic, and psychosocial profiles of adolescent mothers assisted by the health care system in the city of Muriaé, Mata Mineira, Brazil, where dissatisfaction was observed mostly in the early adolescent groups and among those who were not living with the baby's father.³⁵ In this research, the support of family and the father of the baby were registered in more than half of adolescents. Those results are similar to those of Lima, who assessed perceptions and practices of pregnant adolescents and families related to pregnancy in Recife, Brazil, and concluded that more than half of adolescents reported having support from family.³⁶

Less than half of respondents in this study reported lack of support during pregnancy, which is explained by the fact that is seen as a phase in Angola pregnancy in which women need more help. In particular, Angolan culture believes that older, experienced women should provide unconditional support to pregnant women, as reported by Altuna¹⁸ and Necchi.¹

Regarding the emotional and psychological states of the adolescents, few reported worsening of life as the result of pregnancy, characteristic of adolescents with many plans for the future. Additionally, few cases of physical assault were reported.

In Africa, the infant is seen as an important reason to stay at home and is often reported to be the main reason for getting married.^{1,37} Regarding the reaction of parents and partners of adolescents, in the early group, there was a higher proportion of negative reaction, most likely due to the fact that at this age parents do not expect their children to be getting pregnant, because they think that they lack maturity.

In the study group, high rates of cesarean section are showed in both age groups, being above the 15% recommended by the WHO. However, this is still below 56.7% found by Bruzadeli and Tavares,³⁸ when researching expectations about delivery and cesareans among adolescents and adult women. It was expected that the majority of cesareans would be observed in the early group; however, in this study, higher rates were reported in the group of late teens. In Campinas, São Paulo, the incidence rate of cesarean section among the adolescents in a referral hospital was 36.2%.³⁹

The employment status of the parents of the teens did not influence the type of delivery. It is assumed that adolescents who were studying had more vaginal births because they had more access to information and prenatal care, reducing risks of a surgical delivery.

This study identifies the main factors related to adolescent pregnancy as nonuse of contraceptives and cultural and traditional influences. The consequences of adolescent pregnancy were found to be abandonment of education, resulting difficulty in professional advancement, family conflicts, and lost dreams, pointing to the need to change this reality in the country.

Author Contributions

Analyzed the data: HdPT, SBMPT. Wrote the first draft of the manuscript: HdPT, SBMPT, DPC. Contributed to the writing of the manuscript: SGNdG, LGPdS. Jointly developed the structure and arguments for the paper, made critical revisions, and agreed with manuscript results and conclusions: All authors. All authors reviewed and approved of the final manuscript.

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