

OUTCOME OF PREGNANCY IN ADOLESCENT MOTHERS IN MILE FOUR HOSPITAL, ABAKALIKI, EBONYI STATE

By

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SUMMARY

Background of the study: This study was undertaken because of the observed worrisome high number of adolescent mothers who delivered in the Mile IV Hospital, Abakaliki.

Objectives: The study was undertaken to determine the hospital incidence of adolescent pregnancy and their pregnancy outcomes.

Materials and methods: All adolescent pregnancies booking over a one year period were followed up till delivery. The outcome measures were antenatal complications, foetal presentations, mode of delivery, postpartum complications, foetal outcomes and birth weight.

Results: The hospital incidence of adolescent pregnancy was 5%. Sixty-eight percent of the mothers were married. Malaria in pregnancy was expectedly the leading antenatal complication and the Caesarean Section rate was 11%. The relative risk for episiotomy in this group of mothers was 0.25. The maternal mortality rate was 1000 per 100,000 and the perinatal mortality rate was 106.8 per 1000 births.

Conclusions: This study shows that the incidence of adolescent pregnancy is high in the centre. The rates of interventional deliveries and episiotomies are increased and the perinatal outcomes are poor. There is the need to discourage the existing cultural feature of childhood marriage in some parts of the State.

Key Words: Adolescent Pregnancy, Pregnancy Outcome, Mile 4 Hospital

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INTRODUCTION:

Adolescent pregnancy refers to pregnancy in a girl between the ages of eleven and nineteen years.¹ It is an increasing problem of both the developed and developing countries of the world^{2,3}.

Certain cultures permit early marriage of the girl child, and this tends to increase adolescent pregnancy. Though the average age of first marriage for the girl child is sixteen years, there is no legal minimum age of marriage for the girl child common to all Nigerians. Thus, in northern Nigeria, child marriage at as early as age nine is common and in southern Nigeria, marriage is possible after puberty according to customary law.⁴

Other factors that influence adolescent pregnancy includes early sexual maturity, pre-marital sex, societal permissiveness, cultural affiliations, unwanted sexual relations, lack of knowledge and/or ineffective use of contraception, peer influence, dysfunctional family patterns, and low socio-economic status^{3,5}.

Adolescent pregnancy is fraught with a myriad of health and social problems. The health complications include anaemia, pre-eclampsia/ecclampsia, obstructed labour, and post partum haemorrhage^{1,6}. They also have higher incidence of instrumental deliveries, caesarean section, prematurity, low birth weight, intrauterine growth restriction, high perinatal mortality and vesico-vaginal fistula^{1,7}. The social complications include early exit from school, as most primary and secondary school authorities refuse to accept any pregnant student whether married or not. This may lead to underachievement for the girl child^{1,8-9}. It may also result in rejection by the immediate family and social ostracization in cultures where pregnancy outside of marriage is unacceptable. Many unmarried adolescents in order to avoid the social consequences resort to the procurement of illicit abortion

from quacks and are more likely to suffer abortion related morbidities and mortality².

Adolescent pregnancy may be either planned or unplanned. Regrettably, most family planning programmes target adults and married couple^{1,9}. There appears to be a lack of proper understanding of the sexual needs and level of sexual activity of the adolescents, and these may magnify the problem.

The magnitude of adolescent pregnancy seen in routine antenatal clinics was high at the Mile Four Hospital Abakaliki. This prompted the authors to design a study to quantify the extent of the problem, as well as evaluate any related health complications. The aim of the study is therefore to assess the hospital incidence and associated health complications of adolescent pregnancy in a busy mission hospital in Abakaliki, southeast Nigeria. We hope that the findings of this study will enable the hospital management, who espouses a non-judgmental attitude towards pregnant adolescents, device appropriate measures to deal with these problems.

MATERIALS AND METHODS:

This study took place at the Mile Four Hospital, Abakaliki. It is a Mission hospital run by the medical missionaries of Mary of the catholic diocese of Abakaliki. The hospital founded in 1946 to cater for the health needs of the old Abakaliki province now comprising eight local governments in the present Ebonyi State, has a 70-bed maternity unit. It also has paediatric and surgical units, as well as large tuberculosis and leprosy units located outside the main hospital premises. The hospital runs five mobile clinics, visited at least once a month by a health team from the main hospital. During such visits, patients (including destitute patients) who need care that is more detailed are referred to the main hospital to which they are conveyed by the hospital's ambulances.

This study took place at the main hospital and lasted for one year from January to December 2002. All the booked and un-booked adolescents who delivered at the hospital within the study period were included in the study. Using a proforma, data collected and analyzed include socio-demographic characteristics, antenatal complications and pregnancy outcome. For the un-booked patients, information on events during the antenatal period was based on patient's recall. Data analysis was with SPSS version 11.0 software package, using simple percentages, tables and charts. Differences between proportions were tested for statistical significance at the 0.05 levels using the Chi-square statistic.

Every patient was required to grant a written Informed consent before enrolment. The Ebonyi State university teaching hospital research ethics committee granted ethical clearance for the study. The management of the hospital granted permission for the study.

RESULTS:

During the study period, 2001 deliveries took place in the hospital, out of which 100 were by adolescent mothers and 1901 by the adult mothers. This gives a hospital incidence of 4.9% (~5%) of adolescent delivery. However, there were 2058 babies, (out of which 103 were by the adolescents) delivered due to twin deliveries in 3 adolescent mothers. There was a maternal death among the 100 adolescent mothers.

The age distribution of the adolescent mothers shows that thirty-three (33%) were less than 18 years old, while 67 (67%) were between 18 and 19 years. Majority of them (68%) were married and a greater majority (95%) of deliveries by the adolescents were booked. Table 1

TABLE 1: Sociodemographic characteristics of adolescent mothers:

	Frequency	(%)
A. Age Distribution:		
12-17 years	33	33
15- 19 years	67	67
B. Marital Status:		
Married	68	68
Single	32	32
C. Booking Status:		
Booked	95	95
Un-booked	5	5

ANTENATAL COMPLICATIONS:

Majority of the adolescent mothers (76%) had no complications in pregnancy. Thirty-four mothers recorded complications. Out of these 11 (33.4%) had malaria in pregnancy (Table 2).

TABLE 2: Pregnancy complications in adolescents:

Complication	Frequency	%
Malaria	11	33.4
Pre-term contractions	9	26.5
Intrauterine foetal death	5	14.7
Pre-eclampsia/ecclampsia	4	11.8
Urinary tract infection	2	5.9
Abruptio placenta	1	2.9
Mastitis	1	2.9
Candidiasis	1	2.9

PREGNANCY OUTCOME:

Foetal Presentation at delivery:

Table 3 gives the foetal presentation at delivery. The data shows that 94 out of 100 (94%) adolescent deliveries and 1797 out of 1901 adult deliveries (94.7%) had cephalic presentation while 5 (5%) out of 100 adolescent deliveries and 98 out of 1901 adult deliveries (5.2%) were breech. A higher proportion of the adolescents than the adult deliveries presented with transverse lie. The difference in these proportions is statistically significant ($X^2 = 8.55$; $df = 2$; $P = 0.014$).

TABLE 3:
A comparison of pregnancy outcome of adolescent and adult mothers:

	Mothers		Total
	Adolescent	Adult	
A. Mode of Presentation:			
n:	94 (94%)	1797 (94.7%)	1891
Cephalic	5 (5%)	103 (5.2%)	108
Breech	1 (1%)	7 (0.3%)	8
Transverse Lie	100	6 (0.3%)	2001
TOTAL	X ² = 8.55; df = 2	1901 P = .014	
B. Mode of Delivery:			
Spontaneous Vertex Delivery	68 (68%)	1522 (80.1%)	1569
Caesarean Section	11 (11%)	208	168
Instrumental Delivery	14 (14%)	24 (10.9%)	38
Symphysiotomy	7 (7%)	154 (8.1%)	201
TOTAL	X ² = 35.85; df = 3; P = 0.000	17 (0.9%) 1901	

Mode of delivery:

Table 3 also shows that a much higher proportion of the adolescent deliveries than the adult deliveries had instrumental delivery and symphysiotomy. The difference in these proportions is again statistically significant (X² = 35.85; df = 3; P = 0.0000).

Episiotomy rate:

The overall episiotomy rate for all women in the centre was 14.3%. The episiotomy rate was much higher among the adolescents than among the adult mothers. Fifty-six out of a 100 adolescent mothers (56%) had episiotomy while 230 out of 1901 adult mothers (12.1%) had episiotomy. The difference in these proportions is highly statistically significant (X² = 103.45; df=1; P = 0.000000).

Indications for Caesarean Section (C/S):

Majority of mothers in this study (46.7%) had caesarean section due to failure of labour to progress. This was more so in the adolescents

(9 out of 11 or 81.8%) than in adult mothers (89 out of 199 or 44.7%). Two of the 11 caesarean sections in adolescents (18.2%) and 110 of the 199 in adult mothers (55.3%) were due to other reasons. Generally a much higher proportion of adolescents in labour experience failure to progress compared with adults in labour. The difference in these proportions is statistically significant (X² Yates corrected = 4.37; P = 0.04).

The other reasons for caesarean sections recorded in the study include history of more than 2 previous C/S, ante-partum haemorrhage, foetal distress, pre-eclampsia/ecclampsia, cord prolapse, transverse lie, chorioamnionitis, face presentation, and elderly primip. Out of these, there was only I case of cord prolapse and one case of transverse lie among the adolescent mothers. The rest of the indications were among adult mothers.

TABLE 4:
A COMPARISON OF FOETAL OUTCOME OF ADOLESCENT AND ADULT MOTHERS:

	Mothers		Total
	Adolescent	Adult	
A. Sex of the baby:			
Male	56 (54%)	1024 (52.5%)	1080
Female	47 (47%)	931 (47.6%)	978
TOTAL	103	1955	2058
	X ² = 0.18; P = 0.675		
B. Status of baby:			
Alive	92 (89.3%)	1810 (92.5%)	1902
Early neonatal death	5 (4.9%)	27 (1.4%)	32
Fresh Stillbirth	4 (3.9%)	60 (3.2%)	64
Macerated Stillbirth	2 (1.9%)	58 (2.9%)	60
TOTAL	103	1955	2058
	X ² = 4.82; df = 3; P = 0.186		
C. Foetal Weight:			
≤ 1.5 kg	7 (6.8%)	67 (3.4%)	74
1.6-2.5 kg	26 (25.2%)	329 (16.8%)	355
≥ 2.6	70 (68%)	1559 (79.8%)	1629
TOTAL	103	1955	2058
	X ² = 5.64; df = 2; P = 0.06		

FOETAL OUTCOME:

Sex of the baby:

Table 4 shows that age of mothers did not influence the sex of the babies born to such mothers; ($X^2 = 0.18$; $df = 1$; $P = 0.673$).

Status of the baby:

Table 4 also show that out of the 2058 total babies born, 1902 (92.4%) were alive, 32 (1.6%) were early neonatal death (ENND); 64 (3.2%) were fresh stillbirth (FSB); and 60 (3.1%) were macerated stillbirth (MSB).

There were 11 perinatal deaths out of 103 births, among the adolescent mother, giving a perinatal mortality rate of 107/1000 births. In the adult population, 147 perinatal deaths were recorded among 1955 births, with a perinatal mortality rate of 75.2/1000births.

There were, however, no statistically significant difference in the distribution of the dead babies between adolescent and adult mothers ($X^2 = 4.82$; $df = 3$; $P = 0.186$).

Foetal weight:

The observed differences in birth weight between the babies born to adolescent and adult mothers did not reach statistical significance.

THE ASSOCIATION BETWEEN SOCIO-DEMOGRAPHIC VARIABLES AND PREGNANCY OUTCOMES IN ADOLESCENTS:

Age, parity, marital status, religion, and booking status did not influence the occurrence of antenatal complications and presentation of baby at delivery. However, age and marital status influenced the mode of delivery by the adolescents. Thus, of the 33 adolescents aged between 12-17 years, 14 (42.4%) had SVD compared to 54 of the 67 adolescents (80.6%) aged between 18-19 years. The difference in these proportions is highly statistically significant ($X^2 = 12.53$; $P = 0.0004$). Similarly, 52 of the 68 married adolescents (77.6%) compared with 16 of the

32 unmarried adolescents (50%) delivered by SVD. The difference in these proportions is highly statistically significant ($X^2 = 6.41$; $P = 0.01$). All the other socio-demographic variables had no influence on the mode of delivery.

Age, marital status, and booking status influenced foetal outcome among the adolescents but parity and religion did not. Thus, two of the 33 adolescents (6.1%) who were aged 12-17 years had perinatal deaths while 9 of the 67 adolescents (13.4%) aged 18-19 years had perinatal death. The difference in these proportions is statistically significant (X^2 Yates corrected = 3.50; Fisher exact 2-tailed P Value = 0.03).

All 32 single adolescents had live babies while 57 of the 68 married adolescents had live babies. The difference in these proportions is statistically significant (X^2 Yates corrected = 3.50; Fisher exact 2-tailed P Value = 0.03).

Finally, 87 of the 95 booked adolescents (91.6%) compared with 2 of the 5 un-booked adolescents (40%) had live babies. The difference in these proportions is highly statistically significant ($X^2 = 18.66$; $P = 0.00002$).

DISCUSSION

The hospital incidence of adolescent pregnancy of 5% reported in the study is lower than the incidence of 18.6% reported from Nairobi.⁹ It is half the incidence of 10% reported from University of Port Harcourt Teaching Hospital¹ but higher than the 2.5% reported from the University College Hospital Ibadan.¹⁰ This Variable hospital incidence may partly be accounted for by the differences in the populations studied. The study highlights early marriage as one of the factors responsible for adolescent pregnancy. Sixty-eight percent of the study population was married. The finding that up to 15% of these adolescent mothers were multiparous is distressing as it suggest that some of these mothers started family life at much earlier

ages. The health implication on these mothers as well as the demographic impact is grave.

The finding that 95% of these adolescent pregnancies booked for antenatal care differs from earlier reports where most patients did not book for antenatal care. It could be explained by the fact that majority of them were married and thus their husbands cared for them. Also the policy of the hospital which actually discourages judgmental attitude of workers towards adolescent mothers may have encouraged the unmarried mothers to book for antenatal care. This twin factors may also partly explained the rather high hospital incidence reported in this study. However, generally many of the patients booked late for antenatal care and their attendance was poor.

The complications encountered among these groups of mothers include malaria, pre-eclampsia/eclampsia, intrauterine foetal deaths. This is similar to that reported elsewhere^{1, 2, 10}. However the number of patients with malaria in pregnancy was lower than expected considering the fact that most of them were primigravida who have a well documented increased susceptibility to malaria due to a decrease in immunity in pregnancy. It will be of interest to attempt to find the reason for the low rate of malaria among this population.

The study shows that adolescent mothers were at risk of having an episiotomy in labour, with a relative risk of 25%, more so as most of the mothers were primigravida. This finding is not unexpected as it is an established fact that the perineum of primigravida is often rigid and unyielding and a timely episiotomy may be indicated to prevent perineal laceration. Also adolescent mothers may have a higher incidence of instrumental deliveries and symphysiotomies, procedures that usually warrant an elective episiotomy.

There was a high incidence of interventional deliveries 31.1% in the study. This might be explained by the fact that adolescents are often unable to bear down properly in the second stage of labour warranting instrumental delivery.

The Caesarean section rate of 11% in this study is lower than the 15% recommended by the World Health Organisation and also lower than the rate reported elsewhere for this group of mothers¹¹. The lower rate may be due to the fact that symphysiotomy was done in some patients to relieve mild to moderate cephalopelvic disproportion. Also the high number of low birth weight babies might have contributed to reduce the rate of cephalopelvic disproportion.

A comparison of the mode of delivery in adolescent primigravide mothers and adult primigravida mothers would have been of interest but this was not included in the study design. This probably may form the focus of another study.

The study showed that age and marital status influenced the mode of delivery, as women within the ages of 18-19years achieved more vaginal delivery than younger adolescent. This finding is expected because the pelvis of the girl child assumes more of adult proportion as she grows older and thus lesser propensity to cephalopelvic disproportion and Caesarean sections. The incidence of vaginal deliveries was more in the married adolescent mother than the unmarried group. The exact reason for this observation is difficult to ascertain, it probably may relate to age of the adolescent. Age and marital status appeared to influence the mode of delivery

The perinatal mortality rate of 107 per 1000births among these mothers is high. It could have resulted from the poor nutritional state of many of them in pregnancy. This could be worsened by malaria in pregnancy which produces anaemia, intrauterine growth

restriction¹² and in some cases intrauterine foetal death.

The age, marital status and booking status of the patient also influenced foetal outcome in the study. The perinatal mortality in adolescents aged 18-19 years was double that of younger adolescent below the age of 18 years. This may be due to the fact that the younger the adolescent the more likely she will present early in labour, while the older adolescents may probably present in obstructed labour with intrauterine foetal deaths after attempting to deliver at home.

Similarly the perinatal outcome was surprisingly worse in the married adolescent when compared to the unmarried mothers. It may be that the hospital policy of a non judgment attitude towards the unmarried mothers may partly account for the good perinatal outcome in the unmarried adolescent, as the unmarried mothers may present earlier to the hospital because of the social support the hospital may render to them, unlike their married counterparts whose husbands may be expected to play a greater role in the management of their wives. Accordingly the married adolescents may for financial reasons present later to the hospital than the un-married adolescents would.

Booking status appeared to play a significant role in perinatal outcome. The perinatal outcomes were expectedly worse in the unbooked mothers who presented in most cases late to the hospital. This finding suggest that the documented poorer perinatal outcome in adolescent mothers may actually relate to the unbooked adolescent.

CONCLUSIONS

Incidence of adolescent pregnancy is high in this hospital and the fact that 68% of these mothers were married suggests that early marriage may be an established practice in this part of the country. Malaria in pregnancy was unexpectedly low in this pregnant adolescent population but the episiotomy rate was high.

There was also a high rate of interventional deliveries. The low birth weight of 32% in this population is high and may significantly have contributed to the rather high perinatal mortality.

It is recommended that all efforts be made to discourage the practice of early marriage in this environment as a preponderance of the adolescent mothers were married. The free education policy of the state government should be embraced by all.

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