

ORIGINAL ARTICLE**OUTCOME OF TEENAGE PREGNANCY IN THE NIGER DELTA OF NIGERIA****Ibrahim Isa Ayuba^{1*}, Owoeye Gani²****ABSTRACT**

BACKGROUND: *Young maternal age at delivery has been proposed as risk factor for adverse pregnancy outcome, it occurs in all races, faiths, socioeconomic statuses, and regions. Teenage pregnancy can have serious physical consequences and teenage mothers are likely to be unmarried, poor and remain uneducated. The objective of the study was to evaluate risk factors associated with teenage pregnancy and compare the obstetric and fetal outcome to older parturient.*

METHODS: *This is a retrospective study performed over a period of 4 Years (January 1, 2007 to December 31, 2010) in Niger Delta University Teaching Hospital Bayelsa State, Nigeria where data was retrieved from the hospital records. All teenage mothers (aged 13-19) who had delivery within the period were compared with 180 randomly selected deliveries in the older age group (20-32 years) over the same period. Variables of interest were the demographic characteristics of the women, their obstetric complications and the outcome.*

RESULTS: *There were a total of 1341 deliveries during the study period, out which 83(6.2%) were teenagers. Teenage mothers were significantly more likely to be unbooked, ($p = 0.000$) Unmarried, ($\chi^2=26.2$; $p = 0.000$) had significantly more preterm labor, ($P=0.000$) and Caesarean sections ($P= 0.014$). However, there was no difference in both the perinatal and maternal mortality rates between the two groups.*

CONCLUSION: *Teenage pregnancy in the Niger Delta is concentrated among women with less formal education, who are unemployed, unmarried and with inadequate antenatal care and obstetric risks for poor pregnancy outcome. The provision an appropriate contraceptive method and to look with priority after any pregnancy occurring among this age group cannot be overemphasized.*

KEYWORDS: *Teenage pregnancy, risk factors, outcome*

INTRODUCTION

Adolescence, according to WHO refers to the period between the ages of 10 and 19 years in which the individual progresses from the initial appearances of secondary sexual characteristics to full sexual maturity and during which psychological and emotional processes develop from those of a child to those of an adult. It also represents a transition from the state of socio-economic dependence to one of relative (1, 2). Adolescent pregnancy is defined as gestation in women before having reached the full somatic

development (3). The percentage of childbearing adolescent women highly varies by regionally depending on cultural, religious, political, economic and other factors (4).

Pregnancy in the very young is generally considered to be a high risk event because of the additional by reproduction on a body which has still to grow (5). Large epidemiologic studies on this topic were however largely reported from high or medium income countries showing conflicting results (6,7). Most importantly, to date there is a lack of epidemiologic evidence from Sub-Saharan Africa (8-10).

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Adolescent pregnancies constitute major socio-medical and socio-economic problems in both developed and developing countries and are becoming more prevalent in recent times (11). The emergence of this adolescent problem has been attributed to various factors including early marriage, social permissiveness -favoring early exposure to casual sexual activity, unmet needs for contraceptives, maternal deprivation, pre-existing psychosocial problems in the family and general non-functioning family unit could be mentioned among others (12-14). In many developing countries, lack of resources makes contraception and reproductive advice inaccessible and this situation may be exacerbated by religious beliefs that disapprove of artificial birth control methods. As a result many adolescents both married and unmarried would find it difficult to locate or even seek help about sexual matters. Furthermore, may be few facilities offering such support, particularly in remote rural areas where the poorest often lack the resources to travel to these facilities and any fees charged for the services on offer would push them even further out of reach.

In some cases, the ante-natal clinic is the only place where a young woman can obtain reproductive advice, but pregnancy is a pre-condition. Contraception may not be offered to married women until they have borne a child. There is an urgent need for 'youth friendly' health services, as adolescents are unlikely to seek help about sexual matters from a service that is unsympathetic to their needs and anxieties. Furthermore, girls aged 15 to 19 give birth to 15 million babies a year, majority of them without attending an antenatal clinic or receiving the help of a professional midwife, It is therefore essential to devise programs to reach girls in and out of marriage with reproductive advice and services (15,12)

Complications seen in adolescents during pregnancy include anemia from malaria, infection and inadequate nutrition, spontaneous abortions, preterm labor and delivery, pre-eclampsia and eclampsia, antepartium hemorrhage and fetopelvic disproportion with its attendant risks of high operative intervention rates, obstructed labor and its sequelae notably genital fistulae. In the puerperium, puerperal sepsis, anemia and other complications resulting from obstructed labor are common (16, 17). Furthermore, it has been found

that infant mortality among their babies is sometimes two times higher than among those of old peers (18). A stronger likelihood of low birth – weight in the infants has been recorded among adolescent mothers than their counterparts and this has been mainly associated with poor maternal nutrition.

Low birth-weight babies are 5-30 times more likely to die than babies of normal weight (19). If a mother is under 18, her baby's chance of dying in the first year of life is 60 per cent higher than that of a baby born to a mother older than 19. Part of this heavy toll has more to do with poor socio-economic status and lack of ante-natal and obstetric care than physical maturity alone (20).

Moreover, cervical carcinoma, which has been increasing in incidence and presenting at a younger age, is directly linked to the age of first intercourse and to the number of partners, and the spread of infection by human immunodeficiency virus (HIV) has also been linked to number of sexual partners. These medical problems could also occur in addition to the risks of the pregnancy itself. Pregnancy-related deaths are the leading cause of mortality for 15-19 year-old girls (married and unmarried) worldwide where Mothers in this age group face a 20 to 200 per cent greater chance of dying in pregnancy than women aged 20 to 24 (21).

Most of all, the socio-economic consequences of adolescent pregnancy include more unwanted pregnancies and out-of-wedlock children, greater marital instability, poor education, fewer assets and lower income later in life. The problems associated with adolescent pregnancy can be significantly reduced through sex education, provision of contraceptive counseling and services, education of women up to the University level and medical, social and psychological support for affected adolescents. In addition, provision of good antenatal, natal and postnatal care for these adolescents is also emphasized (22-24).

SUBJECTS AND METHODS

This is a retrospective cross sectional study performed over a period of 4 Years (January 1, 2007 to December 31, 2010) in Niger Delta University Teaching Hospital Bayelsa State, Nigeria where data was retrieved from the hospital records. The study groups consists of women aged

19 years or less(Teenage) that gave birth during the study period and women aged 20 years and above(Non teenage) that gave birth during the same period.

There were a total of 1258 deliveries among the non-teenage mothers during the study period, the total number deliveries per year were considered as individual cluster units and the hospital numbers of each record was utilized in making a sample frame. Thereafter, a systematic random sampling technique was applied to select the cases. All the teenage pregnancies (83) identified were reviewed for the study. The information obtained were coded and transferred onto a profoma already design for the study.

Variables relating to the socio demographic characteristics of the women in the two groups, antenatal and intrapartum complications and neonatal outcome were obtained. Statistical analysis was performed with Statistical Package for Social Sciences (SPSS version 10) where nominal data were compared using the chi square test (χ^2) and the difference between means

determined by the students t- test with the level of significance set at $\alpha = 0.05$. Approval for this work was given by the Ethical Committee of the Niger Delta university teaching hospital.

The following Operational definitions were used during the conduct of this study;

Teenage mothers: All mothers whose age at their last birthday was equal to or less than nineteen years.

Non teenage mothers: women whose age was greater than 19 years at their last birthday.

RESULTS

There were a total of 1341 deliveries, during the study period, out which 83 were teenagers (6.2%). The age of the patients ranged from 14 to 19 years with a mean age of (28.1 ± 5.7) years. Their parity ranged from zero to three, with a mean of 2.4 ± 1.9 . About a third 20(24.1%) were primigravidae, 33(39.9%) had at least secondary education and majority 48(57.8%) were unbooked and unmarried 60(72.3%) (Table 1).

Table 1: Socio-demographic characteristics of the patients, Nigeria, 2010

Characteristics	Mother			X^2	P value
	Teenage (n=83) No (%)	Non teenage (n=180) No (%)	Total (n=263) No (%)		
Age (years)					
14 – 16	20 (24.1)	-	20 (7.6)		
17 – 19	63 (75.9)	-	63 (24)		
20 – 22	-	30 (11.4)	30 (11.4)		0.000
23 – 25	-	40 (15.2)	40 (15.2)		
26 – 28	-	46 (17.5)	46 (17.5)		
29 – 32	-	64 (24.3)	64 (24.3)		
X + SD	17.8 + 1.3	26.9 + 3.3			
95% C.I.	17.5 – 18.1	26.4 – 27.4			
Parity					
0	20 (24.1)	40 (22.2)	60 (22.8)		
1 – 3	63 (75.9)	80 (48.8)	143 (54.4)	53.37	0.000
4 – 7	0 (0)	48 (26.6)	48 (18.3)		
>7	0 (0)	12 (6.6)	12 (4.5)		
Educational status					
Nil	19 (22.9)	26 (14.4)	45 (17.1)		
Primary	26 (31.1)	47 (26.1)	73 (27.8)	16.29	0.001
Secondary	33 (39.9)	58 (32.2)	91 (34.6)		
Tertiary	5 (6.1)	49 (27.2)	54 (20.5)		
Booking status					
Booked	35 (42.2)	125 (69.4)	160 (60.8)		0.000
Unbooked	48 (57.8)	55 (30.6)	103 (39.2)		
Marital Status					
Married	23 (27.7)	111 (61.7)	134 (51.0)		0.000
Not Married	60 (72.3)	69 (38.3)	129 (49.0)		

Nineteen (22.9%), 12(14.5%),43(51.8%) and 29(34.9%) of the teenage mothers had anemia in pregnancy, preclampsia, preterm labor and postpartum hemorrhage compared with 11(6.1%),

3(1.6%),19 (10.6%) and 23 (12.7%) among the non-teenage mothers, these complications are statically significant. There is no significant difference in the maternal mortality rate (Table 2).

Table 2: Pregnancy complications in teenage and non-teenage mothers, Nigeria 2010

Complication	Teenage Mothers (n = 83)	Non teenage Mothers (n = 180)	X ²	P
	Freq (%)	Freq (%)		
Iron deficiency anaemia	19 (22.9%)	11 (6.1%)	15.828	0.000
Preeclampsia	12 (14.5%)	3 (1.7%)	14.985	0.000
Aproptio placenta	5 (6.0%)	9 (5%)	0.002	0.962
Placenta praevia	0 (0%)	7 (3.9%)	1.985	0.159
Preterm labour	43 (51.8%)	19 (10.6%)	53.654	0.000
Postpartum haemorrhage	29 (34.9%)	23 (12.8%)	17.589	0.000

Twenty six (31.3%) of the teenage mothers delivered by caesarean section, (p=0.014) majority of which were emergencies 22(84.6%), 55(66.2%) had spontaneous vaginal delivery, while 2(2.5%)

had instrumental vaginal delivery. The figures in the non-teenage mothers are 32 (17.7%), 27 (84.3%), 140(77.8%) and 8(4.4%), respectively (Table 3).

Table 3: Route of delivery in teenage and non-teenage mothers, Nigeria 2010

Route of Delivery	Teenage Mothers (n = 83)	Non teenage mothers (n = 180)	X ²	P
	No (%)	No (%)		
Spontaneous vaginal delivery	55 (66.2%)	140 (77.8%)	3.928	0.048
Instrumental Delivery	2 (2.4%)	8 (4.4%)	0.207	0.649
Caesarean section	26 (31.3%)	32 (17.8%)	6.065	0.014
Emergency	22 (84.6%)	27 (84.4%)	0.000	1.000
Elective	4 (15.4%)	5 (15.6%)	0.000	1.000

There were 27 perinatal deaths; 11(40.7%) in the teenage mothers and 16(59.3%) in the non-teenage mothers, with a perinatal mortality rate of 133/1000, and 106/1000 respectively. There is no

significant difference in the overall perinatal outcome (Table 4).

Table 4: Perinatal outcome in teenage and non-teenage mothers, Nigeria, 2010

	Teenage n = 83	Non teenage n = 180	t	p
Gestational age (mean + SD weeks)	31 + 1.8	37 + 1.2	31.93	0.000
Birth weight (mean = SD kg)	1.2 + 0.2	3.2 + 0.08	115.76	0.000
Apgar score (mean = SD min)				
At 1 min	4 + 0.08	7 + 0.06	337.83	0.000
At 5 min	7 + 0.06	9 + 0.04	319.33	0.000

DISCUSSION

The frequency of pregnancy during adolescence varies highly in Africa and one of the reasons for these demographic differences could be cultural and religious norms (8-10). In addition, these cultural factors may modify health care seeking. Majority of them were single, unbooked with less formal education, while majority of the older mothers were married, booked with tertiary education. And this is similar to the finding from the same region (23). In a study from Zimbabwe, transport costs and costs for prenatal services have been characterized as major factors influencing adolescents' late or non-utilization of prenatal services. In the same study the limited knowledge of young women about antenatal care programs and the fear of HIV testing have been further obstacles to efficient antenatal care (25). Furthermore, Complications like Anaemia in pregnancy, preeclampsia, preterm labor, and postpartum hemorrhage, occurred more commonly in teenagers compared to older mothers, and there was also significant difference in the mean birth weight, gestation at delivery, and mean Apgar scores though there was no significant difference in the perinatal mortality between the two groups. This is different from findings in previous studies (5, 23).

Several reasons for the high risk of delivering a low birth weight infant by adolescent mothers have been discussed in the scientific literature, among others anatomic immaturity and continued maternal growth which may represent biologic growth barriers for the fetus (3). Moreover, adolescent mothers may represent a particularly disadvantaged risk group characterized by low socioeconomic status, financial income and level of education (11, 20), as was found from this study.

Vaginal delivery was the major route of delivery in the study group 55(66.2%), however, teenage mothers had significantly more Caesarean section 26(31.3%), majority 22 (84.6%) were performed as emergencies, this is because, Often times, they had been in labour for more than 24 hours at other centres and often referred late in the night with varied reasons. This is similar to findings from previous studies (5, 23).

behavior of young pregnant women and may therefore constitute by themselves confounding factors for pregnancy outcome as only 6.2% of the parturient are teenagers in this study, which is lower than 9% from Thailand, but higher than 1.7%, and 2.2 % from Benin and Ibadan in Nigeria, respectively (22-24).

In conclusion, teenage pregnancy is not the consequence of promiscuous sexual activities. Amidst the poorer social segments parenthood is seen as a sign of social status; however it has been associated with adverse fetal and maternal outcomes. However, the adverse outcomes can be ameliorated by free and compulsory education for the girl child, education of the populace about the social and medical consequences of teenage pregnancy, making contraceptives available to teens, especially emergency contraceptives, quality antenatal care, and provision of essential obstetric care.

REFERENCES

1. WHO. Adolescent sexuality and reproductive health: Educational and service aspect. Report of a WHO meeting in Mexico City, 28th-April-2nd May, 1981.
2. Sai, T.F. Adolescent Sexuality and Reproductive Health. In: Reproductive Health in Africa Mati, J.K.G, Ladipo, A. O, Burleman, R.T. et al, Eds. John Hopkins' programme for International Education in Gynaecology and Obstetrics. Bangkok, Thailand .JHU Gazete, 2005;7 : 16-30
3. Scholl TO, Hediger ML, Salmon RW, *et al*. Association between gynecological age and preterm birth. *Paediatr Perinat Epidemiol*, 1989; 3:357-366.
4. Paranjothy S, Broughton H, Adappa R, Fone D. Teenage pregnancy: who suffers Arch Dis Child. 2008; 94:239-245.
5. Bacci, A., Manhica, G.M., Machungo, *et al*. Outcome of teenage pregnancy in Maputo, Mozambique. *Int J Gynaecol Obstet*, 1993; 40: 19-23.
6. Chen X, Wen SW, Fleming N, et al. Teenage Pregnancy and adverse birth outcomes: a large population based retrospective cohort study. *Int J Epidemiol*, 2007; 36:368-373.

7. Kramer MS. Determinants of low birth weight: methodological assessment and meta-analysis. *Bull World Health Organ*, 1987; 65:663-737.
8. Adam I, Babiker S, Mohammed AA, *et al.* Low Body Mass Index, Anaemia and Poor Perinatal Outcome in a Rural Hospital in Eastern Sudan. *Journal of Tropical Pediatrics*. 2007.
9. Feresu SA, Harlow SD, Welch K, *et al.* Incidence of and socio-demographic risk factors for stillbirth, preterm birth and low birthweight among Zimbabwean women. *Paediatr Perinat Epidemiol*, 2004; 18:154-163.
10. Elshibly AM, Schmalisch G. The effect of maternal anthropometric characteristics and social factors on gestational age and birth weight in Sudanese newborn infants. *BMC Public Health*, 2008;8:244.
11. Okpani, A.O.U., Ikimalo, J., John, C.T *et al.* Teenage Pregnancy. *Tropical J Obstet Gynaecol*, 1995; 12 (1): 34-36.
12. Aboyeji, A. F. Obstetric performance of Teenage primigravidae in Ilorin, Nigeria. *Nigeria Med J*, 1997; 33 (3): 56-59.
13. Beazley J. M Special Circumstances Affecting Labour. In: Whitefield, C.R., ed. *Dewhurst's Textbook of Obstetrics and Gynaecology for Postgraduates* 5th edn. Blackwell science Ltd. London. 1996, pp 312-313.
14. Romans, S. E., Martins, J. H., Morries, E. M. Risk factors for adolescent pregnancy; how important is child abuse. Otago women's health study. *New Zealand Med. J.* 1997; 110: 1037.
15. Rao Gupta, Geeta (1998), 'Claiming the Future', in *the Progress of Nations 1998*, UNICEF, New York.
16. Ojengbede, O. A., Otolorin, E. O. and Fabanwo, W. O Pregnancy Performance of Nigerian women aged 16 years and below seen in Ibadan, Nigeria. *Afri J Med Sci*, 1987; 16: 89-93.
17. Harrison KA. The influence of maternal age and parity on child bearing with special reference to primigravidae aged 15 years and under. *Br J Obstet Gynaecol*, 1985; (suppl. 5):23-31.
18. United Nations. Adolescent Reproductive Behavior: Evidence From Developing Countries, Vol. II, *UN Population Studies* No.109/Add.1, New York, 1989.
19. WHO. Second World Situation Report. ACC/SCN, Geneva, 1992.
20. UNICEF. Too Old for Toys, Too Young for Motherhood. UNICEF, New York, 1994.
21. Curtis HA, Lawrence CJ, Tripp JH. Teenage sexual intercourse and pregnancy. *Archives of Disease in Childhood*, 1988; 63:373-379.
22. Watcharaseranee N, Pinchantra P, Piyaman S. The incidence and complications of teenage pregnancy at Chonburi Hospital. *J Med Assoc Thai*, 2006; 89 (Suppl 4):S118-23.
23. Ebeigbe PN, Gharoro EP. Obstetric complications, intervention rates and maternal-fetal outcome in teenage nullipara in Benin City, Nigeria. *Trop Doct*, 2007; 37(2):79-83.
24. Adeyinka DA, Oladimeji O, Adekanbi TI, *et al.* Outcome of adolescent pregnancies in southwestern Nigeria: a case-control study. *J Maternal Fetal Neonatal Med*, 2010;23(8):785-9.
25. Chaibva CN, Ehlers VJ, Roos JH. Midwives' perceptions about adolescents' utilization of public prenatal services in Bulawayo, Zimbabwe. 2009. *Midwifery* 2009 Feb 24 (Epub ahead of print) doi:10.1016/j.midw.2009.01.001.