Original Article

Obstetric outcome of teenage pregnancy and labour in Obafemi Awolowo University Teaching Hospitals complex, Ile-Ife: A ten year review

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ABSTRACT

Background: Teenage or adolescent pregnancy is a recognized problem of public health significance. Every year, in excess of 14 million teenage girls give birth to a child; most of these young mothers are living in non-industrialized countries. In view of the high prevalence, there is a need to audit such cases regularly to identify areas of possible improvement in its management. Results obtained from the audit can help in policy formulation and strengthen advocacy on issues ranging from abortion complications to early marriage.

Objectives: The objectives of this 10-year retrospective study are to document the pattern of prevalence, presentation, obstetric outcome of teenage pregnancy, and labor at the Ife Hospital unit of obafemi awolowo university teaching hospitals complex (OAUTHC), Ile-Ife.

Materials and Methods: The study involved a 10-year retrospective analysis of the data collected from the records of all cases of teenage pregnancies during the period from January 1999 to December 2008.

Results: During the period studied there were 6,250 deliveries of which teenage pregnancies accounted for 255 giving an incidence of 4.08% of the total deliveries. Majority (51.76%) of the pregnant teenagers were unbooked for antenatal care and 92.12% of them were nulliparous. Antepartum hemorrhage, abnormal presentations, obstructed labor, and anemia were the commonest complications seen occurring in 54.5, 36.5, 14.1, and 11.4 per cent of the teenagers respectively which was significantly higher when compared to the adult pregnant women ($P = 0.000$). Delivery was by caesarean section in 32.2% of the teenagers compared to 22.6% in the other women ($P = 0.000$). The overall perinatal mortality rate was 68.8/1000 births while teenagers had a perinatal mortality rate of 106/1000 births ($P = 0.013$).

Conclusion: Teenage pregnancy still remains a major recognized problem of public health significance. Most of these patients are from low socio-economic class and their obstetric performance is relatively poor compared to the adult group. The concept of women's sexual and reproductive health rights needs to be reinforced in most developing countries. Improving access to contraception and discouragement of early marriage will help to reduce teenage pregnancy and the overall burden of maternal mortality. Optimal care should be given to teenage mothers not only to improve the pregnancy outcome but also to enhance their social, educational, and emotional adjustment.

Key words: Ile-Ife; outcome; pregnancy; teenage.

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Introduction

The term Adolescence is synonymous with Teenager, the, former emphasizing the period of transition from childhood to adulthood that is accompanied by profound physical, biological, social, and psychological changes.[1]

The WHO defines adolescents or teenagers as persons in the 10–19 years age range.[2] In Nigeria, an adolescent is defined as a person aged between 10 and 22 years; as defined by the National Adolescent Health policy (1995).[2,3]

By 1990, 22% of the world's population were in the 10–24 years age category and of these, 83% live in the developing countries.[2,4] Approximately 22 million Nigerians out of the over 100 million of her estimated total population are between ages of 10 and 19 years.[3,5]

One in four girls in the world becomes a mother before the age of 19 years.[6] Every year, in excess of 14 million teenage girls give birth to a child; most of these young mothers are living in the non-industrialized countries.[6]

Teenage or adolescent pregnancy is said to occur when a girl aged between 10 and 24 years becomes pregnant.[6,7] Teenage pregnancy is a recognized problem of public health significance worldwide,[6,8,9] and it is one of the major reproductive health problems of adolescent girls.[8] The situation is especially worse in Sub-Saharan Africa where they are not only commoner, but occur against the backdrop of poor socioeconomic infrastructure and poor knowledge, availability, and practice of contraception.[5,6,10] Most pregnancies that occur in Teenage girls are unwanted, i.e., undesirable.[2,7,8] Majority of Teenage pregnancies occur in unmarried girls (80%), and these pregnancies were unintended compared with 6% for married girls.[2]

Teenage pregnancy if not controlled for socio-economic pressures or when under routine prenatal care is associated with adverse perinatal outcomes such as low birth weight, preterm delivery, and small for gestational age births.[1,6]

Except for the very young adolescent (less than 16 years), teenage pregnancy itself is not biologically harmful and full-term teenage pregnancy may even constitute the only known primary protective factor against breast cancer.[6]

For years, it has been accepted that teenage pregnancy is a high-risk pregnancy.[1] Many pregnant teenagers come from low socio-economic background, having poor education, and perhaps poor general health due to inadequate nutrition. Iron stores and caloric intake are often reduced among adolescent girls and iron deficiency anemia is often found.[1,2,6]

Over the past 3-4 decades, Nigeria's reproduction has remained high with a crude Birth rate of 45–48 births per 1000 populations.[11] The high fertility rate is observed to be more common among the teenagers.[12] Hence, the government's national policy on populations of 1988 in which one of the cardinal objectives is to reduce teenage pregnancy by 50% by the year 1995 and then by 90% by 2000 AD.[12] Despite this policy a National Demographic and Health survey (NDHS) report from the Federal Office of statistics (FOS) revealed in 1992 that quite a large number of girls aged less than 18 years were already mothers.[13] This implies that the policy is yet to have any appreciable effect.

The incidence of teenage pregnancy is well documented in the developed countries where national figures are available. In the developing countries, figures are usually institutional. By 2000, the teenage birth rate in the United States had declined to 49 per 1000 and about 13 per cent of all infants are delivered by teenagers.[6,14] In other developed countries teenage delivery rates are generally lower. In Sweden, less than 3 per cent of all infants are delivered by teenage mothers,[14] the trends of teenage deliveries are rapidly decreasing in these countries.[15] In Mexico, 17 per cent of live births occur in teenagers,[16] and in the Sahel region of Mali and Burkinal Faso, 21.94% of the births was seen in this group,[3] and in Calcutta (India) 18.68% of labor recorded were in teenage mothers.[17] Though there is a downward trend in UK like other developing countries, the rate is still high compared to other developed countries.

In Nigeria and in many other African countries, teenage pregnancy do occur commonly;[9] the actual incident is not well established. In Enugu and Benin, teenagers contributed 10–15% of deliveries.[18,19] In Port Harcourt (UPTH) it constituted about 10% of all deliveries.[20,21] In Obafemi Awolowo University Teaching Hospital, a previous 10-year review showed the percentage to be 3.7% of total deliveries.[9] Ojengbede *et al*. (1987) in Ibadan reported an incidence of 7 per 1000 (0.7%).[22]

Attitude to teenage pregnancy varies with socio-cultural and religious practices in the community. Thus early marriage,[20] and societal permissiveness, with diverse sexual information from various types of media; favor early exposure to sexual activity and are probably responsible for the increased teenage pregnancies in the region.[6,7,20] Furthermore, with improved nutrition there is likelihood for the menarcheal age to be reduced thus also reducing the age at coitarche.

The younger the age at initiation of intercourse, the greater the likelihood of teenage pregnancy.[6,23]

Pregnant teenagers have relatively low level of education, low-socio-economic status, and socio-psychological immaturity.[6-9,12,14,16,18,21,24] Induced abortion rate is high,[4,6,7,9,12,16,22] and antenatal care is often poor,[22] since most teenagers do not intend to become pregnant.[2] Higher obstetric complications have been associated with teenage pregnancies.[1,2,4,6,7,9,12,14,16,25] Some studies have shown that these complications are not due to the age *per se* but due to unwanted motherhood, small anatomical size of patients, poor socio-demographic characteristics, primigravidity, and poor antenatal care.[25-28]

This retrospective study documents the obstetric problems and perinatal outcome in teenage mothers seen in Obafemi Awolowo University Teaching Hospital Ile-Ife in the last 10 years, and show that obstetric complications are more in teenage pregnancies. Suggestions for improved teenage motherhood are proffered.

Materials and Methods

The case notes of all cases of teenage pregnancies managed in Obafemi Awolowo Teaching Hospital Ile-Ife between January 1, 1999 and December 31, 2008 were reviewed. The data related to age, parity, booking status, socio-demographic profile, antenatal complications, gestational age at delivery, and clinical outcome of both mother and fetus were obtained. The record of total deliveries and other obstetric and perinatal complications were obtained from the hospital statistics department to serve as statistical denominator. Clinical findings were compared to those of all other non-teenage pregnancies managed during the same period being reviewed. Data was analyzed using SPSS 16, Chi-square test was used to determine statistical significance where applicable and a *P* value <0.05 was considered significant.

Results

Out of a total of six thousand two hundred and fifty (6,250) deliveries, between January 1, 1999 and December 31, 2008, teenage pregnancies accounted for 255 of the deliveries, i.e., 4.08% of the total deliveries.

Table 1 showed that the youngest age at delivery was 15 years and the oldest 19 years. The modal age was 18 years which made up 110 (43.14%) of the total number and the mean age was 17.68 years. One hundred and fifty-two (59.61%) of them were single at the time of delivery and 103 (40.39%) married. Seventy (27.45%) of these patients were traders, 80 (31.37%) were permanent house wives, 50 (19.61%) were students in various levels of education, but mainly Secondary Schools; 45 (17.65%) were apprentices in various trades. The men responsible for the pregnancies were mainly traders and artisans who made up 31.37% and 27.45%, respectively. Fifty (19.61%) of those responsible for the pregnancies were students of secondary and tertiary institutions, 13.73% were civil servants. Drivers and farmers each have 3.92% as depicted in Table 1.

Table 2 showed that 240 (94.12%) of these patients were nulliparous, while 15 (5.88%) were primiparous. One hundred

Table 1: Age, Marital status, and Occupation of Pregnant Teenagers at OAUTHC, Ile-Ife

Age (years)	Frequency	Percentage
15	10	3.92
16	30	11.76
17	50	19.61
18	110	43.14
19	55	21.57
Total	255	100
Marital Status	**Frequency**	**Percentage**
Married	103	40.39
Single	152	59.61
Total	255	100
Teenager's Occupation	**Frequency**	**Percentage**
Trading	70	27.45
House wife	80	31.37
Students	50	19.61
Apprentices in various trades	40	15.69
Typist	5	5.88
Total	255	100
Partner's Occupation	**Frequency**	**Percentage**
Trading	80	31.37
Artisans	70	27.45
Students	50	19.61
Civil servants	356	13.73
Drivers	10	3.92
Farmers	10	3.92
Total	255	100

Table 2: Parity, booking Status, and Gestational age at delivery of Pregnant Teenagers at OAUTHC, Ile-Ife

Parity	Frequency	Percentage
0	240	94.12
1	15	5.88
Total	255	100
Booking status	**Frequency**	**Percentage**
Booked	123	48.24
Unbooked	132	51.76
Total	255	100
Gestational age	**Frequency**	**Percentage**
<28 weeks	15	5.88
28 to 36 weeks	75	29.41
37 to 42 weeks	155	60.78
42 weeks and above	10	3.92
Total	255	100

and twenty-three (48.24%) of patients were booked and 132 (51.76%) unbooked.

The gestational age at delivery was 37–42 weeks in 155 (60.78%) of patients, between 28 and 36 weeks in 75 (29.41%) of patients and post-term in 10 (3.92%) of patients.

Table 3 showed the Fetal outcome of teenage pregnancies. The Apgar score at 1 minute was less than 6 in 95 babies (37.25%) and less than 6 in 80 babies (31.37%) at 5 minutes.

One hundred (39.22%) of teenagers' babies had birth weights of 2.5 kg and above, 13.73% (35 babies) had very low birth weight (less than 1.5 kg). The birth weights in 70 cases (27.45%) of the patients were at least 3 kg. The highest birth weight was 3.95 kg [Table 3].

A summary of the obstetric outcome of teenage pregnancies is shown on Table 4. The overall maternal mortality rate was 1968/100,000 live births during this study period. There were two teenage deaths accounting for a mortality rate of 784/100,000 live births.

Table 5 compared the pregnancy complications among teenagers with those of other age groups. Antepartum hemorrhage, abnormal presentations, obstructed labor, and anemia were the most common complications seen occurring in 54.5, 36.5, 14.1, and 11.4% of the teenagers respectively which were significantly higher when compared to the adult pregnant women ($P = 0.000$). Delivery was by caesarean section in 32.2% of the teenagers compared to 22.6% in the other women ($P = 0.000$). The overall perinatal mortality rate was 68 per 1000 births, teenagers had a rate of 106 per 1000 births and older patients had a rate of 66 per 1000 births ($P = 0.013$).

Table 3: Apgar scores and birth weights of babies delivered to Teenage mothers at OAUTHC, Ile-Ife

Apgar score	1 min *n* (%)	5 mins *n* (%)
Six and above	160 (62.75)	175 (68.63)
Less than six	95 (37.25)	80 (31.37)
Total	255 (100)	255 (100)
Birth weight	**Frequency**	**Percentage**
< 1,500 g	35	13.73
1,500-2,500 g	50	19.60
>2,500 g	70	66.67
Total	255	100

Table 4: Summary of obstetric performance of pregnant Teenagers at OAUTHC, Ile-Ife

Obstetric Parameters	Teenagers	Others	All patients
Total deliveries	255	5995	6,250
Total Births	265	6595	6,860
Total twin deliveries	10	600	610
Live births	238	6199	6437
Still births	27	396	423
Perinatal mortality rate	106/1000	66/1000	68/1000
Caesarean section	82	1,355	1437
Caesarean section rate	32.2	22.6	23
Maternal mortality	2	121	123
Maternal mortality rate	784/100,000	2018/100,000	1968/100,000

Table 5: Complications of pregnancy and delivery among Teenage mothers compared to adult women at OAUTHC, Ile-Ife

Complications	Teenagers (*n*=255) Freq (%)	Others (*n*=5995) Freq (%)	*P*
Antepartum haemorrhage age (APH)	139 (54.5)	401 (6.7)	0.000
Pre-eclampsia	12 (4.7)	227 (3.8)	0.453
Eclampsia	19 (7.5)	143 (2.4)	0.000
Anaemia (PCV <30%)	29 (11.4)	334 (5.6)	0.000
Breech presentation	8 (3.1)	254 (4.2)	0.391
Other abnormal presentations	93 (36.5)	97 (1.6)	0.000
Fetopelvic disproportion	16 (6.3)	298 (4.97)	0.351
Obstructed labor	36 (14.1)	425 (7.1)	0.000
Premature rupture of membranes	4 (1.6)	146 (2.4)	0.376
*Intrauterine growth restriction	12 (4.7)	50 (0.83)	0.000
Still Birth	27 (10.6)	396 (6.6)	0.013
Caesarean Section	82 (32.2)	355 (5.9)	0.000

*Diagnosis usually made in booked patients hence data may not reflect true incidence. †Some patients had more than one complication

Discussion

Traditional expectations that teenage girls remain virgins until marriage are incompatible with the realities of urban life.[4,29-31] The girls' need to prove their fertility makes them further susceptible to unprotected sex. The 21st century adolescent is also subjected to a wide spectrum of media information, courtesy of advancement in global communications.[2] Pregnancy among teenagers constitutes an important medical, social, and educational problem.[9] Although the incidence of teenage pregnancy in Nigeria is unknown, studies have shown that teenagers constitute the bulk of cases of illegal abortion.[32-34] In our environment, teenagers account for 59.9% of illegal abortions and 31.6% of abortion-related deaths.[9] The contribution of teenage deliveries (4.08%) is lower than figures recorded in some parts of Nigeria where pregnancy and marriage occur relatively earlier.[7,18,20] This is probably related to the fact that early marriage is not common in southwestern Nigeria compared to other parts of the country. Pregnant teenagers in our environment would more likely opt for abortion rather than continue the pregnancy to viability.[9] The percentage of teenage pregnancy however compares well with 3.7% detected earlier in the same environment.[9] The relative increase

may be because of the increase in societal permissiveness and poverty.[4,12,16,23] Most teenagers do not intend to get pregnant.[4] This could not be ascertained from the case notes; the desire to terminate pregnancy is more closely associated with the socioeconomic status of the teenager and of her parents.[8] 27.45% of the patients were petty traders, 17.65% were apprentices in a trade, 19.61% were students and 31.37 were housewives. These support the fact that the more enlightened teenagers are the more likely to have induced abortion and hence not present for delivery. The partners of these patients were also mainly traders (31.37%) and artisans (27.45), this is in keeping with the reported status of spouses.[29]

The woman's educational status and husband's occupation are well known parameters for measuring the social class of these patients, but however the data on the patients' educational status was scanty in the case note. This information would be better extracted in a prospective study.

The proportion of these patients who are married (40.39%) is not unexpected; it is in line with the assumption that teenage marriage is uncommon in this part of the country.[9]

Teenage pregnancy in this study was found to be associated with increased frequency of antepartum and intrapartum complications as documented by other authors. These complications might have arisen from age or other socio-physical factors,[13,28,35,36] as it is not controlled. The incidence of premature rupture of membranes was not markedly higher in teenagers, this may be explained by the fact that being majorly nulliparous (94.12%), they may not have as much pelvic and vaginal infections (as to predispose to PROM) compared to the older women who have had more coital exposure and previous deliveries.

In this study 51.76% of the patients lacked adequate antenatal care and thus the higher chance of antenatal and intrapartum complications.[37] This percentage is similar to 51.9% in a previous study (Ogunniyi *et al*., 1991). Delivery was at term in 60.78% of the study group.

The caesarean section rate in this study (32.2%) is high and statistically significant when compared with 22.6% in the older age group. This may be because of a higher incidence of fetopelvic disproportion with obstructed labor (together accounting for 20.4%) when compared with the older population (12.1%). The fetal outcome was significantly poor among teenagers. The perinatal mortality rate was 106/1000 births compared with 66/1000 births in the adult women ($P = 0.013$). Also 18.7% of the babies had moderate asphyxia, which is in conformity with other studies,[9,14,17,38,39] and likely due to the higher incidence of maternal complications such as Antepartum hemorrhage, Eclampsia, Anemia, Abnormal presentations, Obstructed labor, and Intrauterine growth restriction which were all statistically significant when compared with the adult pregnant population. The percentage of low birth weight (33.34%) in this study is similar to the finding from a study in India;[17] also the higher incidence of intrauterine growth restriction among the pregnant teenagers in this study may be a reflection of the poor care and nutritional support given to the patients in addition to the medical complications they experienced since majority of them did not book for antenatal care. The highest birth weight of 3.95 kg was recorded in a 17-year-old booked, married, house wife; this is quite unusual, but probably due to the family support and care received by this married patient.[9,26,28,40,41]

The maternal mortality rate of 784 per 100,000 live births is less than 1,968 per 100,000 live births recorded overall, it is not in keeping with findings in other studies.[42] This may be because of the smaller number of pregnant teenager population compared to the pregnant adult population.

Limitation

This hospital-based study only reveals the performance of the teenagers who booked for antenatal care and those that presented themselves as emergencies during pregnancy and delivery. Thus, the teenagers with spontaneous or induced abortions and other gynecological complications are not in this study.

By inference, the low socio-economic class present at the hospital with teenage pregnancy,[4,14,41] and their obstetric performance is relatively poorer than that of the older age group.[4,7,9,12,17,23,24,25,42] Only a controlled clinical study would state whether the cause of this poor obstetric performance is physical, psychological, or age specific.

Conclusion and Recommendation

The obstetric outcome of teenage pregnancy is poor compared to the pregnant adult population. Emphasis should therefore be focused on effective family planning services and family life education, with improvement in the general socioeconomic status of the citizens.[7,42] Legalization of abortion may reduce the effect of unwanted pregnancy on obstetric outcome. Adolescent contraception needs to be emphasized, as this will go a long way in reducing

complications of abortion and teenage pregnancy.[2,8] The recent increase in the female school enrolment will go a long way to minimize teenage pregnancy; since adolescents who have finished at least seven years in school are more likely to become matured at marriage.[2,8] There is also need for women economic empowerment and regard for reproductive health right of women and adolescents. The concept of sexual and reproductive health and rights needs to be reinforced in most developing countries especially the issue of early marriages.[8] Optimal care should be given to teenage mothers not only to improve the pregnancy outcome but also to enhance their social, educational, and emotional adjustment.[1,6] Complications of labor and delivery are highly dependent on the quality of prenatal care.[1,6] Finally, the care of pregnant adolescents need special attention and should be adjusted to suit their specific needs.[1,8]

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Conflicts of interest

There are no conflicts of interest.

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