

Outcome of Teenage Pregnancy at Federal Medical Centre, Katsina: A Five-Year Review

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ABSTRACT

Background: Teenage pregnancy is a high-risk obstetric event. Pregnancy in this transitional stage is associated with adverse obstetric and neonatal outcomes and remains a major contributor to maternal and neonatal morbidity and mortality.

Objective: To determine the prevalence, socioeconomic variables as well as obstetric outcomes among teenage mothers in FMC Katsina.

Study design: A five-year retrospective study, conducted at Obstetrics and Gynaecology department of Federal Medical Centre, Katsina from 1st January 2010 to 31st December 2014.

Results: Teenage delivery accounts for 723 out of 10,391 cases, with a prevalence of 6.95% (69.5 per 1000 births). The mean age was 18.03±0.99 years. Five Hundred and Ninety One (95.6%) were married with 47.4% having secondary level of education. Of the 60.5% of them that booked, 33% was in third trimester. Majority (74.1%) delivered at term. Caesarean section was the mode of delivery in 14.2% of cases, mainly due to Eclampsia (69%) and Cephalopelvic disproportion (12.5%). Anaemia (33.5%) and Preterm delivery (9.5%) were the leading maternal and fetal morbidities. There were 3 maternal deaths (0.5%).

Babies born to unbooked mothers were more likely to be of low birth weight. *P* value < 0.01.

Conclusion: Teenage pregnancy is high and is associated with late booking and increased incidence of Caesarean section. Anaemia and preterm deliveries were the leading morbidities. Non-booking is associated with low birth weight babies.

Keywords

Teenage pregnancy, Obstetric outcome, FMC Katsina.

Introduction

Teenage pregnancy is a major public health problem and remains a major contributor to maternal and child mortality and to the cycle of ill-health and poverty [1].

Adolescence is a transitional stage of physical and mental human development, involving biological, social and psychological changes, which occurs between 10-19 years of age (WHO) [2]. It also represents a transition from the state of socio-economic dependence to one of relative independence [3,4]. Teenagers are adolescents between 13 and 19 years of age.

Teenage pregnancy is pregnancy in females aged 13 to 19 years and is considered a high-risk obstetric event with global outlook [4,5]. Pregnancy in this transitional stage has social health issues and medical consequences worldwide with adverse obstetric and neonatal outcomes, which are being influenced by biological immaturity, unintended pregnancy, inadequate perinatal care, poor maternal nutrition and stress [2].

Teenage pregnancy is a world-wide phenomenon affecting both developing and developed countries [6]. Globally, about 16 million girls aged 15-19 and some 1 million girls under 15 give birth every year, accounting for 11% of all births worldwide [1]. Ninety-five per cent of these births occur in low and middle-income countries, with 50% occurring in sub-Saharan Africa [1]. It has been shown that one in four girls in the world becomes a mother before the age of 19 years [5]. The 2014 world health statistics indicates the average global birth rate among 15 to 19 years old is 49 per 1000 girls [1].

Nigeria has the highest teenage birth rate in Africa [7]. Teenage pregnancy rate of 22.9% was recorded in Nigeria [8] and it was estimated that twenty three percent of women would have begun childbearing between 15 to 19 years of age (17% have had a child and 5% are pregnant with their first child) [8]. In Nigeria, reported incidence of teenage pregnancies includes 2.4% in Ibadan [9], 1.93% in Ilorin [10], 1.6% in Jos [11] and 5% reported by Harrison in Zaria north western Nigeria [12].

Katsina state has the highest rate of teenage pregnancy [8]. Childbearing began early in Katsina than in any other state in Nigeria. It was shown that about 53% of women aged 15-19 have begun childbearing in Katsina compared to 1% of teenage women in Osun [8]. Possible reasons for this wide variation are differences in educational and socio-economic characteristics [8]. In Northern Nigeria particularly in parts of Katsina, early marriage soon after menarche is a long-established custom. Teenage pregnancy after marriage has social approval in our society. This has adverse impact on maternal mortality and perinatal morbidity. High illiteracy level and poor socio-economic factors contributes to <30% institutional delivery in teenage pregnancies. Teenage pregnancy contributes to higher prevalence of Eclampsia as well as maternal mortality in this region of the country [8].

The factors responsible for teenage pregnancy include inherent emphasis on sexual activity in contemporary societies, early sexual maturation with decreasing age at menarche, early marriage, peer pressure, overpowering effect of the partners, single-parent factors as a result of high divorce rate, poor socioeconomic background, unemployment and importantly lack of education [6]. Teenagers with no education or in the lowest wealth quintile are more likely to have started childbearing [8].

A leading predisposing factor to unplanned pregnancy among teenagers is the low level of utilization of modern contraception [1,8,9,13].

Complications from pregnancy and childbirth are a leading cause of death among girls aged 15 to 19 [7]. These complications include PIH, Pre-eclampsia/ eclampsia [2]. Anaemia in pregnancy, as a result of malaria and inadequate nutrition is an adverse outcome of adolescent pregnancy [2,14]. Preterm labour and delivery, low birth weight babies and fetopelvic disproportion are risks posed in adolescent pregnancy [15]. Puerperal sepsis, anaemia and other complications resulting from obstructed labour are usually seen during puerperium.

Problems of unsafe abortion are common among teenagers [5,8,14]. WHO estimated that between 2.0-2.4 million adolescent's resorts to abortion every year [5]. In comparison to Adults, they are more likely to delay the abortion, resort to unskilled personnel, use dangerous methods and present late when complications arise [5].

Previous study has shown that teenage mothers who receive good family and community support, timely quality antenatal care and deliver in the hospital have similar obstetric outcome when compared with their older peers [16].

With education and career pursuit, early marriage and pregnancy are likely to be delayed, thereby decreasing the incidence of teenage pregnancy. Education and provision of healthcare facilities with its attendant advantages are likely to increase the number of parturient delivering in hospitals [15].

Findings of this study will identify points of care for improved vigilance and service delivery to this group of parturient. Early booking, good care during pregnancy and delivery can prevent the incidence and complications in this high-risk group [15-18].

Aims and Objectives

The study aims to access the Prevalence, Socioeconomic variables as well as maternal and fetal outcomes among pregnant teenagers who delivered at Federal Medical Centre, Katsina between first of January 2010 and thirty-first of December 2014.

Specific Objectives

- To determine the prevalence of teenage pregnancy at Federal Medical Centre, Katsina.
- To identify the socio-demographic determinants; Age distribution, marital status, educational status and booking status among pregnant teenage mothers.
- To identify maternal outcomes and complications among the pregnant teenage mothers.
- To identify the fetal outcome among pregnant teenage mothers.

Materials and Methods

Federal Medical Centre, Katsina is the only tertiary health institution in Katsina state, a state in the North Western zone of Nigeria. It serves as a referral Centre for Katsina state and neighbouring states like Zamfara state and even some parts of Niger Republic. The state is renowned in educational history of Nigeria both formal and informal.

Study Population

Inclusion criteria

All parturient aged 13 to 19 years with viable pregnancies.

Exclusion criteria

Parturient older than 20 years of age.

Study Design

This was a retrospective study of all the parturient who met the inclusion criteria and who delivered in Federal Medical Centre, Katsina. The labour ward register, midwives' report books and clients' case notes were retrieved and relevant data extracted.

Information collated included the age of the parturient, marital status, educational status, booking status, gestational age at booking, Mode of delivery, Gestational age at delivery, complications during pregnancy and at delivery, neonatal birth weight, Apgar score at 1 and 5 min respectively.

Ethical clearance

Approval for the study was obtained from the Ethics committee of Federal Medical Centre, Katsina.

Statistics

Data obtained were entered into a personal computer and analysed with SPSS Software version 16.0 using descriptive statistics. The P- Value of <0.01 defined statistical significance.

Results

There were 723 teenage deliveries out of 10,391 deliveries during the study period. The prevalence of teenage deliveries was 6.95% (69.5 per 1000 birth). Case details were available for 85.5% of these deliveries.

Table 1: Socio-Demographic Variables of Teenage Parturients.

i) Age Distribution of Parturient

Age (Years)	Frequency	Percentage
15	15	2.4
16	37	6.0
17	94	15.2
18	242	39.2
19	230	37.2
Total	618	100

Mean age=18.03 ± 0.99 (SD=0.991) Modal Age =18

The ages of the teenage parturient ranged from 15 to 19 years. There were only fifteen teenagers below the age of 16yrs. The Mean age was 18.03 ± 0.99 yrs. Majority (242) of them were 18yrs of age (39.2%). Most (95.6%) of them were married. Two Hundred and Ninety Three (47.4%) of them had education up to secondary level with only 13 (3.0%) of them reaching tertiary level of education.

ii) Marital Status of Parturient

Status	Frequency	Percentage
Married	591	95.6
Unmarried	27	4.4
Total	618	100

iii) Educational Status

Status	Frequency	Percentage
Informal	114	18.4
Primary	193	31.2
Secondary	293	47.4
Tertiary	13	3.0
Total	618	100

BOOKING STATUS

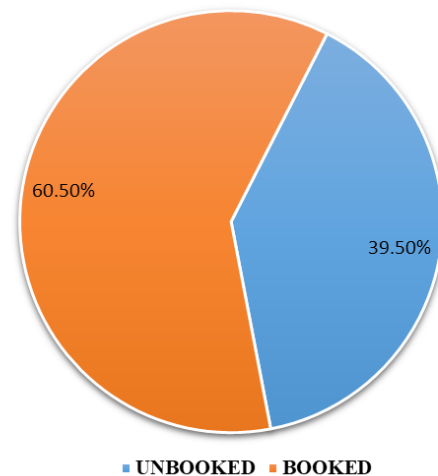


Figure 1: Booking Status.

The pie chart (Figure 1) above showed the booking status, with 60.5% of the pregnancies booked.

Table 2: Maternal Factors

i) Period of Booking

Period of booking	Frequency	Percentage
First trimester	61	9.9
Second trimester	109	17.6
Third trimester	204	3.3
Total	374	60.5

ii) Gestational Age at Delivery

Gestational age	Frequency	Percentage
< 38 Weeks	108	17.5
38-42Weeks	458	74.1
>42 Weeks	52	8.4
Total	618	100

iii) Mode of Delivery

Mode of Delivery	Frequency	Percentage
Vertex	507	82.24
Caesarean section	88	14.2
Breech delivery	12	1.94
Vacuum extraction	5	0.81
Forceps delivery	5	0.81
Total	618	100

Only 61(9.9%) of the teenage parturient booked their pregnancy in the first trimester. Second and third trimester booking constituted 50.6%. Most (458) of the teenage parturients delivered between

37 completed weeks and 42 weeks gestation (74.1%). Most (507) of the teenage parturients had vertex delivery (82.24%). Eighty-eight of them had Caesarean section (14.2%). Twelve (1.94%) had assisted vaginal Breech delivery. Instrumental deliveries (forceps and vacuum extraction) were conducted in five cases (0.81%) each.

Table 3: Complications of Pregnancy and Delivery among Teenage Parturient.

Complication	Frequency (f)	Percentage (%)
Anaemia	111	33.5%
Preterm delivery	59	9.5
Pre-eclampsia/eclampsia	93	15.1
Perineal laceration	28	4.5
Postpartum haemorrhage	43	7.0
Maternal death	3	0.5

Anaemia was found in 111 (17.9%). Pre-eclampsia/Eclampsia occurred in 93 (15.1%) of cases. There were 3 maternal deaths among the teenagers within the study period

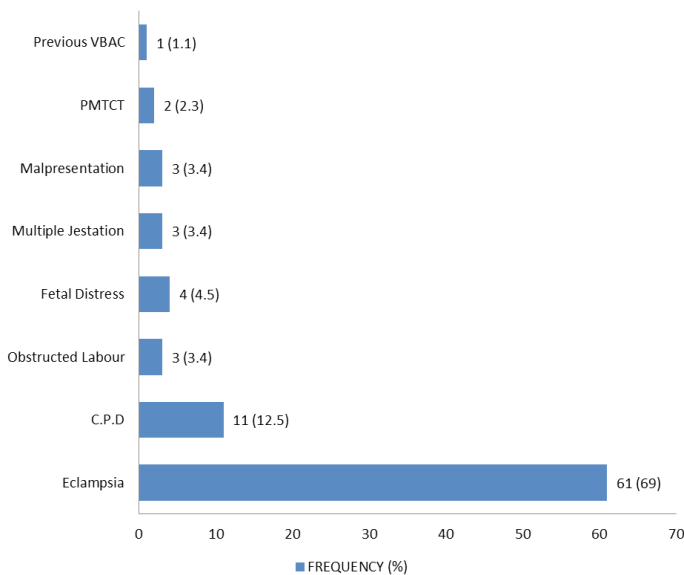


Figure 2: Frequency Chart Showing Obstetric Indication for Caesarian Section. N= 88.

There were multiple indications for the eighty-eight Caesarean sections carried out among the teenagers during the study period. Eclampsia and Cephalopelvic disproportion were the leading indication; Sixty-one (69%) and Eleven 11 (12.5%) respectively. Prevention of mother to child transmission featured an indication for Caesarean section in 2 of the teenagers.

Table 4: Fetal and Early Neonatal Outcomes.

Variable	Frequency (f)	Percentage %
Birth Weight (g)		
<2500	49	7.93
2500 – 2999	256	41.42
3000 – 3999	294	47.57
>4000	19	3.07
Total	618	100

Mean APGAR At 1 Minute	Frequency (f)	%
1 – 6	172	27.8
≥7	401	64.9
Mean APGAR at 5 minutes	Frequency (f)	Percentage %
1 – 6	49	7.9
≥7	524	82.8
Scbu admission	49	7.9

Birth weight for babies ranged from 0.82 to 4.3kg, with majority (47.57%) falling within 3000 – 3999g. Only 49 (7.93%) had birth weight below 2500g. There were 45 cases of stillbirth during the study period.

Most 401 (64.9%) had good Apgar score (> 7) at 1min. only 59 (7.9%) had Apgar score below 7 at 5min. Up to 49 of the babies born to teenage mothers were admitted into SCBU.

Table 5: Relationship between Booking Status and Birth Weight.

Birth weight	Booking status		Total
	Booked	Unbooked	
<2500g	12	37	49
2500g – 2999g	113	143	256
3000g – 3999g	240	54	294
>4000g	9	10	19
Total	374	244	618

Pearson’s Chi – Square value = 1.116 df = 3
P value < 0.01

There is a statistically significant association between booking status of the teenage parturient with the birth weight at delivery. Babies born to unbooked mothers were more likely to be of low birth weight compared to the babies born to booked mothers P (< 0.01).

Discussion

The incidence of teenage deliveries worldwide range between 0.8% - 12.7% [18,19]. In Nigeria, incidence varies widely, ranging between 1.8 – 51% within and between geopolitical zones, communities and institutions [11,20].

The incidence of teenage pregnancy in this study is 69.5 per 1000 deliveries, as compared with findings from other tertiary centres in Nigeria [4,9,11,16,17]. In Northern Nigeria, particularly in parts of Katsina, early marriage soon after menarche and teenage pregnancy after marriage has socio-cultural approval, hence the high prevalence rate in this Centre.

Teenage mothers in this study were aged 15-19 yrs. Most (95.6%) of cases were married and this supports findings in Nigeria and from other countries, that early marriage remains an important determinant of teenage pregnancy [16-18].

Demographic differences in the incidence of teenage pregnancy are a reflection of sociocultural, educational, economic and religious

factors. These factors may modify health care seeking behaviour of young pregnant women and thus impact pregnancy outcome [4]. In the southern part of the country, significant percentage of pregnant teenagers were unmarried, with most of them seeking termination of pregnancy, in as high as 93.3% among undergraduates and up to 100% in schooling adolescents [14,21]. In north western part of Nigeria, pregnancy soon after marriage is a thing of pride regardless of the age at conception [14,21]. The average age of marriage in Nigeria is still less than 19yrs [22].

This study showed that significant proportion of teenagers (60.5%) have booked their pregnancies. Provision of free medi-care as well as continuous campaign on the importance of antenatal care might contribute to this finding. However, 36.5% of the teenage mothers were unbooked. This is similar to the trend described in various centres [4,16].

Adequate prenatal care is important to reduce the adverse effects of adolescent pregnancy, neonatal risks and complications. Antenatal care allows for multidisciplinary management; skilled obstetric care and surveillance for complications, health and nutritional counselling and even contraceptive awareness. However, late antenatal booking in the second and third trimester was significantly demonstrated in this study. Such trends have been observed in many studies, in which teenagers are more advanced in pregnancy at their first visit [2,13].

Anaemia was the commonest pregnancy complication (33.5%) among the teenage mothers in this study. Similar findings have been reported in other studies [10]. This is probably due to malaria, inadequate nutrition and lack of antenatal care among some of the teenage mothers.

Preterm delivery complicated 59 cases of the teenage pregnancies. Preterm delivery is associated with and also has been attributed to higher frequencies of anaemia, pregnancy-induced hypertension and infections in teenagers [2,23]. Antepartum anaemia, pre-eclampsia/eclampsia and post-partum haemorrhage occurred in 17.0%, 15.0% and 6.9% of cases, respectively. Also suggested is that, preterm labour could be caused by the intrinsic biological factors in teenagers such as an immature body build [19,24].

Caesarean section was done for 14.2% of the teenage parturients, with eclampsia and Cephalopelvic disproportion as main indications. Obstructed labour and hypertensive disorders of pregnancy were some of the most observed complications in teenage pregnancy [2,4,16,18,20,23]. Prevention of mother to child transmission of HIV (17.7%) is an indication for caesarean delivery in 17.7% of parturients, either due to either late booking or incidental diagnosis in labour.

In this study, there were 49 low birth weight babies, with 7.93%, which was more among unbooked parturients (37 vs 12). This has demonstrated the impact of antenatal care on birth weight in this unique group. Low birth weight babies are at significant risk

for adverse neonatal and infant outcomes. There were 45 (7.2%) Still births among teenage mothers. Teenage pregnancy has been associated with increased incidence of late fetal death and neonatal mortality [10,16,25,26]. .

Conclusion

Teenage pregnancy is high (6.95%), with early marriage as the main contributor, and is associated with late booking and increased incidence of Caesarean section. Anaemia and preterm deliveries were the leading morbidities. Non-booking is associated with low-birth-weight babies and most Obstetric complications were related to late or non-booking for antenatal care rather than chronological age.

Recommendations

Advocacy for Gender justice and girl-child education coupled with improvement of the socio-economic status of the people will reduce teenage marriage and by extension, teenage pregnancy, and its associated health hazards.

Early booking, with subsequent quality antenatal care, coupled with delivery with skilled birth attendant in a facility that provides comprehensive emergency Obstetric care will help in improving the outcome of Teenage pregnancies.

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