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Teenage pregnancy: Obstetric and perinatal outcomes at a tertiary hospital in Port-Harcourt, Nigeria

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Abstract
Background: Pregnancy in teenage girls is generally considered a high-risk event due to the perceived physical immaturity and anatomical inadequacies of the mothers, with adverse pregnancy outcomes.
Objective: This study aimed to determine the prevalence of teenage pregnancy and to evaluate the obstetric and perinatal outcomes at a tertiary care hospital.
Methods: A retrospective case-control study was conducted over a two-year period from 1st November 2021 to 31st October 2023. The study population were teenage women, with singleton pregnancy, who were delivered ≥28 weeks of gestation. An equal number of adults 20-34 years were used as control, for comparison. Information was extracted from the hospital records. Data were analyzed with SPSS for Windows version 23. Statistical analysis was performed using the Chi-square test or Fisher's exact test as appropriate, and the level of significance was set at P value of <0.05.
Results: The prevalence of teenage deliveries was 1.49%. There was a significant association between nulliparity (OR 10.155; P=0.0001) and unbooked status (OR 4.403; P=0.028) with teenage pregnancy. There were no significant differences between the groups with regards to the mode of delivery (P=0.069) and occurrence of medical complications (P=0.244). Significant findings of preterm births and induced/augmented labour in association with teenage pregnancy on bivariate analysis, were no longer significant factors following multivariate logistics regression analysis.
Conclusion: Teenage pregnancy was comparatively not very prevalent in our setting, it was significantly associated with nulliparity and unbooked status, and the obstetric and perinatal outcomes were comparable to their adult counterparts.

Keywords: Teenage pregnancy, adolescent pregnancy, obstetric outcome, perinatal outcome

Introduction
The teenage period traditionally refers to adolescents between the ages of 13 and 19 years. In the female, this is a period when structural, functional, and psychosocial developments occur in a child to prepare her for motherhood. According to the World Health Organization (WHO), pregnancy in a girl aged between 10 and 19 years is referred to as adolescent or teenage pregnancy [1]. It has occurred in all known cultures, past and present, with an estimated 14 million girls giving birth to a child every year worldwide [2]. Approximately 90% of teenage births occur in developing countries, with rates ranging from 8% in East Asia to 55% in sub-Saharan Africa. Varying incidence has been reported in Nigeria, ranging from 1.67% to 11.8% [4-10]. However, the actual incidence may be higher than that reported, as many teenage pregnancies are terminated and never recorded [8].
The incidence of teenage pregnancy is increasing in both well-developed and developing countries [11, 12], and has been attributed to multiple factors including early age of sexual maturation with decreasing age of menarche, lack of knowledge or ineffective use of contraceptives, broken homes or lack of parental guidance, peer group influence, sexual coercion and rape, and loss of cultural norms and values [13-15]. In developing countries, this is further compounded by early age of marriage, cultural permissiveness and low socioeconomic status of parents or poverty [16]. In Nigeria, higher rates are reported in the Northern parts, especially among the Muslim Hausa/Fulani tribes, where early marriage is legal and common and does not involve a stigma, while in the Southern parts, the mainly Christian girls tend to marry in the second or even third decade of life (A delay mainly occasioned by educational

pursuit), which makes teenage pregnancy not common, unacceptable and associated with social stigma [7, 17, 18].

Pregnancy in teenage women is generally considered a high-risk event due to the physical immaturity of the mothers. In addition, there are some extrinsic factors like socioeconomic condition, illiteracy, and inadequate prenatal care that affect the outcome of pregnancy in teenage girls [19, 20]. Commonly reported complications associated with teenage pregnancy include preterm birth, pregnancy-induced hypertension, anaemia, overall increase in perinatal loss, low birth weight babies, cephalopelvic disproportion resulting in high risk of operative delivery, and sexually transmitted diseases among the unmarried teenagers [9, 13, 21, 22].

Some studies have argued that with good psychological support, adequate prenatal care and supervised hospital delivery, teenagers could have similar pregnancy outcome to that of older women, concluding that the obstetric risk of teenage pregnancy are predominantly due to social and economic factors rather than chronological age [17, 18, 23]. In addition to the health risk, teenage pregnancy also results in termination of academic pursuits, loss of self-esteem, low job opportunities, and repeat pregnancy [24].

Because of the adverse perinatal and maternal outcomes in teenage pregnancy, there is need to continue to raise awareness of their management. Several studies have been carried out on teenage pregnancy in Nigeria, but none has been carried out at our Centre and there is paucity of recent studies in the South-Southern region of Nigeria. We therefore aimed to evaluate the obstetric and perinatal outcomes of teenage pregnancy in our tertiary health facility.

Methods

Study Site / Area

This study was carried out at the Rivers State University Teaching Hospital (RSUTH) Port Harcourt, Nigeria. The hospital serves as a referral center for neighbouring health facilities and provides antenatal care and delivery services for women registered with the hospital. Port-Harcourt is a state capital, a metropolitan city, and made up of multi-ethnic, multicultural residents. The hospital has qualified teams of Obstetricians, Paediatricians and Anaesthetists, and availability of blood bank services. There is an average annual delivery of about 1700 births.

Study design and population

This was a retrospective case-control study conducted over a two-year period from 1st November 2021 to 31st October 2023. The study population were women between the ages of 13 and 19 years, with singleton pregnancy, who were delivered ≥28 weeks of gestation at the RSUTH. An equal number of women, meeting the criteria, were used as control for comparison. The control group were aged 20-34 years, as this age group is associated with the best obstetric outcome [25] and were recruited from those who delivered immediately after a selected teenage mother (to ensure delivery by the same team, in order to eliminate the bias that could occur when managed by different teams). Those with previous caesarean scar, multiple pregnancy, pre-pregnancy medical conditions, parity ≥5, maternal age ≥35 years and incomplete data were excluded from both groups.

Data collection

A data collection form was used to collect information from the hospital records and case notes of the patients. Data regarding maternal demographic factors like maternal age, parity, booking status, and gestational age (GA) at delivery were retrieved. Maternal outcomes in terms of medical or labour complications, mode of delivery, indication for caesarean delivery (CD), postpartum haemorrhage (PPH), and vaginal birth trauma; as well as perinatal outcomes in terms of birth outcome (Live or stillborn), sex of baby, birth weight, birth asphyxia (Apgar scores at 5 minutes <7), admission to Neonatal Intensive Care Unit (NICU), and perinatal mortality were noted. The maternal age of the teenagers was categorized into ≤16 years (Younger teenagers) and >16 years (older teenagers) for further analysis.

Definition of terms

Patients who registered and received prenatal care elsewhere and were referred to our center were regarded as booked, while those who did not receive prenatal care anywhere were considered unbooked. Preterm births were taken as deliveries that occurred at <37 completed weeks of gestation. Low birth weight were babies that weighed <2500g. PPH was defined as recorded blood loss ≥500 mls for vaginal delivery or ≥1000 mls following CD. Preeclampsia was established when the mother had systolic blood pressure (SBP) ≥140 mm Hg or diastolic blood pressure (DBP) ≥90 mm Hg, on two occasions 6 hours apart, and proteinuria +1 using a dipstick test. Severe preeclampsia was diagnosed when SBP ≥160 mm Hg or DBP ≥110 mm Hg, with a proteinuria ≥2+ using dipstick test. Eclampsia was diagnosed if a preeclampsia patient had a history of seizure.

Statistical analysis

Data were analyzed with SPSS (Statistical Package for Social Sciences) for Windows version 23 (SPSS Inc., Chicago, Illinois, USA). The data were analyzed using descriptive and inferential statistics and presented using frequency tables, as mean, numbers and percentages. Statistical analysis was performed using the student's *t*-test, Chi-square test or Fisher's exact test as appropriate. The Odds Ratio (OR) at 95% confidence interval were determined where appropriate and the level of significance was set at P value of <0.05.

Results

There was a total of 3350 deliveries during the two-year study period out of which 50 were teenage pregnancies, giving a prevalence of 1.49%. The mean age of the teenager's ± standard deviation (SD) was 17.42±1.36 years, with a median of 18 years and age range of 14-19 years. The mean age of the controls (adults) was 28.58±3.54 years, with a median of 29 years and a range of 20-34 years. The median parity of the teenagers was Para 0 and range was Para 0-1, while that of the adults was Para 1 and range was 0-4) with a significant difference between the groups P=0.0001. The mean GA ± SD was 37.78±0.71 weeks and 37.98±1.56 weeks, respectively for the teenagers and adults, with a range of 32-41 weeks in both groups, and the difference was not significant (P=0.614).

Table 1 relates to the distribution of the maternal and obstetric characteristics of both groups. The majority of the teenage mothers 48 (86.0%) were nulliparous before birth, compared to 15 (30%) in the adult group, and this was statistically significant (P=0.0001). There was also a significant finding on the distribution of the GA at delivery (P=0.001), with the proportion of the teenage mothers having preterm (30.0%) and postdate (16%) deliveries more than their adult counterparts. There was a higher proportion of unbooked mothers 18(36%) in the teenage group compared to 4 (8.0%) in the adult group, a difference that was statistically significant (P=0.001). With regards to labour in the women, a significantly higher number 11 (22%) in the teenage group were induced or augmented compared to 2(4.0%) of their adult counterparts. However, there were no significant differences between the groups with regards to the mode of delivery (P=0.069) and occurrence of medical complications (P=0.244).

Table 1: Distribution and comparison of maternal and obstetric characteristics among the study population

Variables	Teenage group N = 50 n (%)	Adult group N = 50 n (%)	Total N = 100 n (%)
Parity			
Para 0	43 (86.0)	15 (30.0)	58 (58.0)
Para ≥1	7 (14.0)	35 (70.0)	42 (42.0)
Chi Square = 32.184; p-value = 0.0001*			
Gestational age			
≤36 weeks	15 (30.0)	6 (12.0)	21 (21.0)
37-40 weeks	27 (54.0)	43 (86.0)	70 (70.0)
>41 weeks	8 (16.0)	1 (2.0)	9 (9.0)
Fisher's exact test = 12.885; p-value = 0.001*			
Booking status			
Booked	32 (64.0)	46 (92.0)	78 (78.0)
Unbooked	18 (36.0)	4 (8.0)	22 (22.0)
Chi Square = 11.422; p-value = 0.001*			
Type of labour			
No labour	12 (24.0)	10 (20.0)	22 (22.0)
Spontaneous	27 (54.0)	38 (76.0)	65 (65.0)
Induced	8 (16.0)	2 (4.0)	10 (10.0)
Augmented	3 (6.0)	0 (0.0)	3 (3.0)
Fisher's exact test = 8.145; p-value = 0.030*			
Mode of delivery			
SVD	23 (46.0)	33 (66.0)	56 (56.0)
CD	26 (52.0)	17 (34.0)	43 (43.0)
Vacuum	1 (2.0)	0 (0.0)	1 (1.0)
Fisher's exact test = 4.567; p-value = 0.069			
Indication for CD (N = 43)			
Severe preeclampsia	8 (30.8)	6 (35.3)	14 (32.6)
CPD	7 (26.9)	7 (41.2)	14 (32.6)
Eclampsia	3 (11.5)	1 (5.9)	4 (9.3)
Others	8 (30.8)	3 (17.6)	11 (25.6)
Fisher's exact test = 1.730; p-value = 0.715			
Medical complications			
None	33 (66.0)	39 (78.0)	72 (72.0)
Severe preeclampsia	11 (22.0)	9 (18.0)	20 (20.0)
Eclampsia	4 (8.0)	0 (0.0)	4 (4.0)
Others (HIV/Cardiac disease)	2 (4.0)	2 (4.0)	4 (4.0)
Fisher's exact test = 4.542; p-value = 0.244			

*Statistically significant ($p<0.05$).

An analysis of the labour complications in the study groups is shown in Table 2. There were no significant differences between the groups in terms of occurrence of CPD (P=0.486), perineal tear (P=0.052), episiotomy (P=0.264), fetal distress (P=0.610), obstructed labour (P=0.234), PPH (P=0.564) and other complications (P=0.352). Other complications included breech presentation 1 (2.6%), failed induction 1 (2.6%), poor maternal effort 1 (2.6%) among the teenage group, and meconium aspiration 1 (2.5%) among the adult group.

Table 2: Distribution and comparison of labour complications among the study population

Variables	Teenage group N = 38 n (%)	Adult group N = 40 n (%)	Total N = 78 n (%)
CPD			
Yes	8 (21.1)	6 (15.0)	14 (17.9)
No	30 (78.9)	34 (85.0)	64 (82.1)
	Chi Square = 0.485; p-value = 0.486		
Perineal tear			
Yes	4 (10.5)	0 (0.0)	4 (5.1)
No	34 (89.5)	40 (100.0)	74 (94.9)
	Fisher's exact p-value = 0.052		
Episiotomy			
Yes	2 (5.3)	6 (15.0)	8 (10.3)
No	36 (94.7)	34 (85.0)	70 (89.7)
	Fisher's exact p-value = 0.264		
Fetal distress			
Yes	2 (5.3)	1 (2.5)	3 (3.8)
No	36 (94.7)	39 (97.5)	75 (96.2)
	Fisher's exact; p-value = 0.610		
Obstructed labour			
Yes	2 (5.3)	0 (0.0)	2 (2.6)
No	36 (94.7)	40 (100.0)	76 (97.4)

	Fisher's exact; p-value = 0.234		
Other complications			
Yes	3 (7.9)	1 (2.5)	4 (5.1)
No	35 (92.1)	39 (97.5)	74 (94.9)
	Fisher's exact; p-value = 0.352		
PPH	N = 50	N = 50	N = 100
Yes	6 (12.0)	8 (16.0)	14 (14.0)
No	44 (88.0)	42 (84.0)	86 (86.0)
	Chi Square = 0.332; p-value = 0.564		

CPD = cephalopelvic disproportion; PPH = postpartum haemorrhage.

The mean fetal birth weight among the teenage mothers ± SD was 2918.00±541.23 g, with median of 2900 g and range of 1800-3800 g; while the mean fetal birth weight among the adult mothers ± SD was 3244.00±596.99 g, with median of 3300 g and range of 1500-4200 g. The distribution of the perinatal outcomes among the study groups is depicted in Table 3. There was no significant difference in the stillbirth rate between the teenagers and their adult counterparts (2.0% versus 4.0%, P=1.000) respectively. Although there were higher proportions of occurrence of low birth weight in the babies (22.0% versus 12.0%), birth asphyxia (12.2% versus 6.3%) and NICU admissions (24.5 versus 10.4%) in the teenage group compared to their adult counterparts respectively, the differences in the distributions were not statistically significant (P=0.062, P=0.304, and P=0.063 respectively). There were more female babies, 26 (52.0%) in each group, with no significant differences in the sex ratio.

Table 3: Distribution and comparison of perinatal outcomes among the study population

Variables	Teenage group N = 50 n (%)	Adult group N = 50 n (%)	Total N = 100 n (%)
Fetal outcome			
Alive	49 (98.0)	48 (96.0)	97 (97.0)
Still-birth	1 (2.0)	2 (4.0)	3 (3.0)
	Fisher's exact test = 0.350; p-value = 1.000		
Birth weight			
<2500 g	11 (22.0)	6 (12.0)	17 (17.0)
2500-3900 g	39 (78.0)	40 (80.0)	79 (79.0)
≥4000 g	0 (0.0)	4 (8.0)	4 (4.0)
	Fisher's exact test = 5.156; p-value = 0.062		
Sex			
Male	24 (48.0)	24 (48.0)	48 (48.0)
Female	26 (52.0_	26 (52.0)	52 (52.0)
	Chi Square = 0.000; p-value = 1.000		
Birth asphyxia (N = 97)			
Yes	6 (12.2)	3 (6.3)	9 (9.3)
No	43 (87.8)	45 (93.8)	88 (90.7)
	Fisher's exact p-value = 0.304		
NICU admission (N = 97)			
Yes	12 (24.5)	5 (10.4)	17 (17.5)
No	37 (75.5)	43 (89.6)	80 (82.5)
	Chi Square = 3.322; p-value = 0.063		

The variables with an association on bivariate analysis were fitted into a multivariate logistic regression analysis, to see significant factors associated with teenage pregnancy, after excluding cofounders, as shown in Table 4. There was a significant association between nulliparity (Para 0) and teenage pregnancy (OR 10.155; P=0.0001) and between unbooked status and teenage pregnancy (OR 4.403; P=0.028). Teenage mothers were ten-fold more likely to be nulliparous and four-fold more likely to be unbooked, than their adult counterparts. Preterm births and induction/augmentation of labour were no longer significant factors following multivariate logistics regression analysis.

Table 4: Multiple logistic regression showing associated factors of teenage pregnancy among the women

Factors (N = 152)	Coefficient(B)	Odds ratio (OR)	95% CI	p value
Parity				
Para 0	2.318	10.155	3.39-30.42	0.0001*
Para ≥1 [R]		1		
Gestational age				
≤36 weeks	1.101	3.007	0.87-10.38	0.081
≥37 weeks [R]		1		
Booking status				
Unbooked	1.482	4.403	1.18-16.48	0.028*
Booked [R]		1		
Type of labour				
Induced/Augmented	1.156	3.177	0.61-1.64	0.171
No labour/Spontaneous [R]		1		

*Statistically significant ($p<0.05$)

The maternal age of the teenagers was then categorized into ≤16 years (younger teenagers) and >16 years (older teenagers) for further analysis, with the comparison in terms of maternal and obstetric characteristics shown in Table 5, labour complications shown in Table 6 and perinatal outcomes shown in Table 7. The only statistically significant finding (P=0.024) was the proportion in occurrence of perineal tear, which occurred in 37.5% in the younger teenage group compared to 3.3% in the older teenage group, depicted in Table 6. There were no other significant differences when the younger teenagers were compared with the older teenagers in terms of maternal, obstetric, and perinatal outcomes.

Table 5: Comparison of maternal and obstetric characteristics amongst the younger (≤16) and older (>16) teenage mothers

Variables	≤16 years N = 11 n (%)	>16 years N = 39 n (%)	Total N = 50 n (%)
Parity			
Para 0	11 (100.0)	32 (82.1)	43 (86.0)
Para ≥1	0 (0.0)	7 (17.9)	7 (14.0)
	Fisher's exact p-value = 0.324		
Gestational age			
≤36 weeks	3 (27.3)	12 (30.8)	15 (30.0)
37-40 weeks	6 (54.5)	21 (53.8)	27 (54.0)
>41 weeks	2 (18.2)	6 (15.4)	8 (16.0)
	Fisher's exact test = 0.264; p-value = 1.000		
Booking status			
Booked	8 (72.7)	24 (61.5)	32 (64.0)
Unbooked	3 (27.3)	15 (38.5)	18 (36.0)
	Fisher's exact p-value = 0.724		
Type of labour			
No labour	3 (27.3)	9 (23.1)	12 (24.0)
Spontaneous	6 (54.5)	21 (53.8)	27 (54.0)
Induced	2 (18.2)	6 (15.4)	8 (16.0)
Augmented	0 (0.0)	3 (7.7)	3 (6.0)
	Fisher's exact test = 0.767; p-value = 1.000		
Mode of delivery			
SVD	7 (63.6)	16 (41.0)	23 (52.0)
CD	4 (36.4)	22 (56.4)	26 (52.0)
Vacuum	0 (0.0)	1 (2.6)	1 (2.0)
	Fisher's exact test = 2.011; p-value = 0.214		
Indications for CD (N = 26)			
Severe preeclampsia	2 (50.0)	6 (27.3)	8 (30.8)
CPD	0 (0.0)	7 (31.8)	7 (26.9)
Eclampsia	0 (0.0)	3 (13.6)	3 (11.5)
Others	2 (50.0)	6 (27.3)	8 (30.8)
	Fisher's exact test = 2.554; p-value = 0.610		
Medical complications			
None	9 (81.8)	24 (61.5)	33 (66.0)
Severe preeclampsia	2 (18.2)	9 (23.1)	11 (22.0)
Eclampsia	0 (0.0)	4 (10.3)	4 (8.0)
Others (HIV/Cardiac disease)	0 (0.0)	2 (5.1)	2 (4.0)
	Fisher's exact test = 1.449; p-value = 0.781		

Table 6: Comparison of labour complications amongst the younger (≤16) and older (>16) teenage mothers

Variables	≤16 years N = 8 n (%)	>16 years N = 30 n (%)	Total N = 38 n (%)
CPD			
Yes	0 (0.0)	8 (26.7)	8 (21.1)
No	8 (100.0)	22 (73.3)	30 (78.9)
	Fisher's exact p-value = 0.164		
Perineal tear			
Yes	3 (37.5)	1 (3.3)	4 (10.5)
No	5 (62.5)	29 (96.7)	34 (89.5)
	Fisher's exact p-value = 0.024*		
Episiotomy			
Yes	0 (0.0)	2 (6.7)	2 (5.3)
No	8 (100.0)	28 (93.3)	36 (94.7)
	Fisher's exact p-value = 1.000		
Fetal distress			
Yes	1 (12.5)	1 (3.3)	2 (5.3)
No	7 (87.5)	29 (96.7)	36 (94.7)
	Fisher's exact p-value = 0.381		
Obstructed labour			
Yes	0 (0.0)	2 (6.7)	2 (5.3)

No	8 (100.0)	28 (93.3)	36 (94.7)
	Fisher's exact p-value = 1.000		
Other complications			
Yes	0 (0.0)	3 (10.0)	3 (7.9)
No	8 (100.0)	27 (90.0)	35 (92.1)
	Fisher's exact p-value = 1.000		
PPH			
Yes	2 (18.2)	4 (10.3)	6 (12.0)
No	9 (81.8)	35 (89.7)	44 (88.0)
	Fisher's exact p-value = 0.601		

Table 7: Comparison of perinatal outcomes amongst the younger (≤16) and older (>16) teenage mothers

Variables	≤16 years N = 11 n (%)	>16 years N = 39 n (%)	Total N = 50 n (%)
Fetal outcome			
Alive	11 (100.0)	38 (97.4)	49 (98.0)
Still-birth	0 (0.0)	1 (2.6)	1 (2.0)
	Fisher's exact p-value = 1.000		
Birth weight			
<2500g	1 (9.1)	10 (25.6)	11 (22.0)
2500-3900g	10 (90.9)	29 (74.4)	39 (78.0)
	Fisher's exact p-value = 0.416		
Sex			
Male	3 (27.3)	21 (53.8)	24 (48.0)
Female	8 (72.7)	18 (46.2)	26 (52.0)
	Chi Square = 2.472; p-value = 0.119		
Birth asphyxia (N = 49)			
Yes	1 (9.1)	5 (13.2)	6 (12.2)
No	10 (90.9)	33 (86.8)	43 (87.8)
	Fisher's exact p-value = 1.000		
NICU admission (N = 49)			
Yes	1 (9.1)	11 (28.9)	12 (24.5)
No	10 (90.9)	27 (71.1)	37 (75.5)
	Fisher's exact p-value = 0.252		

Discussion

The prevalence of teenage deliveries of 1.49% in this study is close to the 1.1% reported by a study from Malaysia [26], 1.67% reported by Ezegwui *et al* from Enugu, Nigeria [4], 1.6% reported from Jos, Nigeria [18], and 1.93% obtained from Ilorin, Nigeria [13]. Slightly higher prevalences have been reported in other Southern Nigeria towns like 2.25% in Abakaliki [27], 2.4% in Ibadan [15], and 2.18% in Nnewi [18], while much higher figures are reported in Northern Nigerian towns like 5.8% in Kano [28], and 11.8% in Sokoto [7]. These varying incidences reported across Nigeria may not be unrelated to cultural factors such as religion, female education, and access to contraceptives. The inhabitants of our study area are predominantly Christians and have embraced Western education, resulting in delayed age of childbearing.

This study also reported that a significant number of our teenagers, 36%, were unbooked for prenatal care, similar to the 36% reported in the study by Garba *et al.* [28]. A higher proportion of unbooked teenagers have been reported such as 58.1% by Ezegwui *et al.* [4]. This implies that lack of prenatal care is common among teenage mothers and have been attributed to ignorance of the importance of prenatal care, poverty, lack of family and social support, non-availability of prenatal care services, unpleasant remarks by health workers toward unmarried pregnant teenagers, and attempts to evade public glare since most clinics lack privacy [29].

Reports from findings of studies on mode of delivery in pregnant teenagers compared to adult counterparts have been conflicting. This study did not find any significant differences between the groups. While Sulaiman *et al.* [26] and Ezegwui *et al.* [4] reported an increased occurrence of CD among teenagers, other studies have reported an increased occurrence of SVD [30-32]. Teenagers have been said to be less physically mature with smaller pelvic sizes compared to adult mothers, and hence are more likely to have CPD and subsequent CD [17]. This has been disproved as pregnant teenager's ≥14 years, who are taking haematinic and good nutrition, have been found to have enhanced longitudinal growth involving the bony pelvis as well, with the increment being greater in nulliparae compared to multipara [17]. All the teenagers in our study were ≥14 years, with median age of 18 years, were mainly nulliparae and majority (64%) had prenatal care. There was also a tendency for more preterm births and lower birth weight babies being born to the teenage mothers than their adult counterparts, the mean birth weight was 2918 g and 3244 g for the teenagers and adults respectively.

There was no statistically significant difference between our study groups in the occurrence of pre-eclampsia/eclampsia, preterm births, low birth weight, birth asphyxia, NICU admissions and stillbirth rates. Other studies have also reported no significant differences in the occurrence of stillbirths [30], low birth weight [17, 33], preterm births [4, 34, 35], and birth asphyxia [26, 36]; while some have reported a higher outcome of preterm births [30, 37, 38], low birth weight [37, 38], and stillbirth [39, 40]. Among the several reasons that could be responsible for good outcomes will be early booking and adequate prenatal care, as well as good family support.

This study also reported a significant occurrence of perinatal tears among the younger teenagers, but this might not be related to the immaturity of their pelvises. Birth trauma might occur during uncomplicated deliveries due to pressure on the perineum from the fetus during passage through the birth canal, and it has been suggested that factors such as impatience and inadequate

skill of the birth attendant could contribute to birth trauma [41].

Limitations

The retrospective design of the study was a limitation. Data missing from the medical records, like marital status, education, and prenatal anaemia, were not included in the analysis. The relatively small sample size and being a single center institution-based study means the results cannot be generalized to a wider population, except after a follow up large multicenter study.

Conclusion

Teenage pregnancy was comparatively not very prevalent in our setting, it was significantly associated with nulliparity and unbooked status, and the obstetric and perinatal outcomes were comparable to their adult counterparts. Utilization of family planning services and prenatal care will ultimately reduce the rate of teenage pregnancies and minimize the associated adverse pregnancy outcomes.

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Conflict of interest

The Authors declare no conflict of interest.

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