COMPARISON OF FIRST PARTURITION OUTCOME BETWEEN MOTHERS AGED 15-19 AND 20-24 YEARS

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ABSTRACT
Context: Comparative data on pregnancy, labour and delivery outcomes of nulliparae aged 15-19 and 20-24 years are limited.
Objectives: To compare the pregnancy, labour and delivery outcomes of nulliparae aged 15-19 and 20-24 years.
Study Design, Settings and Subjects: A retrospective comparative study conducted at Olabisi Onabanjo University Teaching Hospital, Sagamu, Nigeria. Nulliparae aged 15-19 years (study group) and 20-24 years (control group) were compared with respect to height, haematocrit levels at booking and 48 hours after delivery, mode of delivery, birth weight, and antenatal, intrapartum and postpartum complications.
Results: The study group booked with significantly lower haematocrit ($p<0.002$) and had a significant drop in the haematocrit level after delivery ($p<0.001$) than the control group. There were no significant differences between the two groups with respect to maternal height, birth weight, mode of delivery and Apgar scores at one and five minutes. The frequency of prolonged labour from cephalo-pelvic disproportion was similar between the study and control groups.
Conclusion: There were not much differences in the obstetric performance of the two groups presumably because the bulk of the study group were aged 18 and 19 years when the pelvis had attained maximum growth as in the control group.

Keywords: Parturition, Obstetric outcomes, Teenage, Nulliparity

INTRODUCTION
Age is an important index in the care of pregnant women and teenage pregnancy had been linked with unfavourable outcomes of pregnancy and delivery particularly in the developing countries of sub-Saharan Africa.[1,2,3] These unfavourable outcomes are related to the socio-economic circumstances of the teenagers and also their pelvic anatomical development.

Socio-economically, due to the stigma attached to teenage pregnancy and the unmarried status of most of them,[4] the young girls are often discouraged from attending antenatal clinics for care. This usually results in high obstetric complications including severe anaemia, low birth weight, pre-eclampsia/eclampsia[5] and increased perinatal morbidity and mortality.[6,7]

Anatomically, the risk of pelvic contraction leading to cephalo-pelvic disproportion and increased risk of caesarean section in the teenagers had been variously reported.[6] This has been attributed to inadequate pelvic development. Others have also found significant differences in the caesarean section rates between the teenagers and the older patients.[8,9] This study had been carried out to compare the obstetric performance of the teenagers, precisely aged 15-19 years with that of older women in order to remove bias, if any, regarding teenage pregnancy in the occurence of obstetric complications as a result of age group difference.

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PATIENTS AND METHODS

This was a retrospective and comparative study that was conducted at the Obstetric Unit of Olabisi Onabanjo University Teaching Hospital, Sagamu, Ogun State. Records of pregnancy and delivery of nulliparous women aged 15-19 and 20-24 years who delivered between June 2002 and December 2003 were retrieved from the Medical Records using the labour ward register and medical records. The two groups were compared under the following characteristics: maternal age, height, haematocrit levels at antenatal booking and 48 hours after delivery, mode of delivery, birth weight as well as antenatal, intrapartum and postpartum complications.

The data obtained were analysed and subjected to statistical analysis using the chi-squared and student *t*-test. Level of significance was set at $p<0.05$. The age group 15-19 years was regarded as the study group while the 20-24 years age group served as the control.

RESULTS

Records of 156 and 240 patients aged 15-19 and 20-24 years respectively were retrieved. The mean age of the study group (17.8 ± 1.2 years) was significantly lower compared to that of the control group (21.5 ± 1.4 years) ($t=27.1$; $p<0.001$). The 18 and 19 year-olds constituted about three-quarters (73.1%) of the study group. The mean height of the study and the control groups were 155.5 ± 3.3 cm and 155.5 ± 3.8 cm, respectively. There was no statistically significant difference between the mean height for two comparison groups (Table 1). Eighty five women (54.5%) booked for antenatal care in the study group while 141(58.8%) booked in the control group.

The mean haematocrit at booking was 30.4 ± 2.3% and 31.2 ± 2.6% for the study and control groups, respectively. There was a statistically significant difference between the mean haematocrit among booked patients in both groups ($t=2.3$; $p<0.02$). Forty eight hours after delivery, the corrected mean haematocrit level (excluding the unbooked cases) for the study and control groups were 28.6 ± 2.6% and 29.3 ± 3.0%, respectively. This difference was statistically significant ($t=4.6$; $p<0.001$). However, the overall mean haematocrit levels for the study and control groups were 27.3 ± 3.1 and 27.8 ± 3.5%, respectively, a difference which was not statistically significant (Table 2).

Table 3 shows the mode of delivery and birth weights for the two groups. Spontaneous vertex delivery with or without episiotomy occurred in 72.4% and 70.4% of the study and control groups, respectively. Assisted vaginal delivery of the vertex occurred in 13.5% and 14.6% in the study and control groups, respectively. Caesarean section was the mode of delivery for 10.3% and 10.8% of mothers in the study and control groups, respectively. All the noted differences did not reach statistical significance level. The mean birth weights were 2800 ± 500 g and 2900 ± 700 g for the study and control groups, respectively. There were no significant difference between the mean birth weights for both comparison groups ($t=1.5$; $p<0.20$). In both groups, more than 70% of the babies weighed above 2500 g.

The mean Apgar scores at one minute were comparable between the study (6.8 ± 3.1) and control (6.6 ± 2.2) groups ($t=0.32$; $p<0.57$). The complications encountered during labour and delivery in the two groups are shown in Table 4. The proportion of patients with cephalo-pelvic disproportion was not significantly different between the two groups, so also were other complications.

DISCUSSION

The social stigma associated with teenage pregnancy had in the past discouraged young pregnant girls from attending antenatal clinics with a resultant increased obstetric risks and poor outcomes. This view was maintained until recently when it was realised that if antenatal care is adequate, the risks of childbearing for the teenagers do not appear greater than for older mothers.[10]

From this study, the mean age of 17.8 years and a corresponding mean height of 155.2 centimeters in the teenagers make them not significantly different physically from the older mothers. This implies that their pelves are likely the same especially since the epiphyses have been found to close to further growth at about 14.5 years of age in adolescent girls.[10]

Equal proportions of patients in the study and control groups booked for antenatal care and were thereby exposed to the same level of care. This is

in contrast to the preponderance of unbooked teenage mothers in a previous study.[6] Considering the obstetric outcomes in the two groups, the mean haematocrit values between them were not significantly different similar to other reports.[8]

Regarding the mode of delivery among the teenagers, the caesarean section rate was found not to be significantly different from that of the control. This is similar to previous observation of Kurup et al in Singapore[8]. However, from a similar setting in Ilorin, Nigeria, the caesarean section rate among the teenagers was found to be significantly more in women above 19 years of age. This could have been due to the fact that in the Ilorin study, most of the teenagers were unbooked compared with the older mothers, with a resultant increased probability of caesarean section among referred teenagers. In the present study, similar proportions were booked for antenatal care in the two groups and thus, the detection and treatment of medical complications are likely to be at comparable levels.

The fact that there was no significant difference in the mean birth weights between the two groups in the study also contrasts the observations of other reports.[6,8]As pointed out earlier, most of the teenagers in one of the studies[6] were mainly unbooked without any form of antenatal advice on nutrition, healthy living, haematinic use and prompt attention to some maternal illnesses such as anaemia and pre-eclampsia that might predispose mothers to low birth weight.

In teenagers , the majority of obstetric complications are often due to a lack of prenatal care and small bony pelvis.[11,12] However, in the present study the occurrence of major obstetric complications were not significantly different between the two groups. This could have been as a result of similar proportions of booked patients which translated to similar levels of antenatal care for the two groups. Also, most of the patients (98.7%) in the study group were aged 15 years and more, when they would have attained their maximum pelvic growth potential as the older mothers.[11] This most likely accounts for the similarity in the frequencies of cephalo-pelvic disproportion between the two groups.

From this study, it can be concluded that, if similar antenatal care is made available to teenagers aged 15 years and more, the obstetric outcomes should be similar to that of older mothers.

REFERENCES

1. Adetoro O.O., Agah A. The implications of childbearing in postpubertal girls in Sokoto, Nigeria. Int J Gynaecol Obstet 1988; 27: 73-77.
2. Bhalerao A.R., Desai S.V. Outcome of teenage pregnancy. J Postgrad Med 1990; 36: 136-139.
3. Sule-Odu A.O., Olatunji A.O. Outcome of teenage pregnancy in Sagamu, Nigeria. Afr J Med & Pharm Sci 2000; 1-7.
4. Russell J.K. School girl pregnancies: medical, social and educational considerations. Br J Hosp Med 1983; 29: 159-166.
5. Olatunji A.O., Sule-Odu A.O. Presentation and out come of eclampsia at a University Hospital. Niger J Clin Pract 2007;10 (1):1-4.
6. Jimoh A.S., Abdul I. Outcome of teenage pregnancies in Ilorin, Nigeria. Trop J Obstet Gynaecol 2004; 21(1): 27-31.
7. Sule-Odu A.O., Olatunji A.O. Maternal mortality among pregnant teenagers delivered in Sagamu, Nigeria. Afr J Med & Pharm Sci 2004; 54-58.
8. Kurup A., Viegar O., Singh K. & Ratnam S.S. Pregnancy outcomes in unmarried teenage nulligravidae in Singapore. Int J Gynaecol Obstet 1989; 30(4): 305-511.
9. Straton J.A.Y., Stanley F.J. Medical risks of teenage pregnancy. Aust Fam **Physician** 1983; 12(6): 474-480.
10. Edmond D.K. Gynaecological disorders of childhood and adolescents. In: Dewhurst Textbook of Obstetrics and Gynaecology for Postgraduates. 6th Ed. Editor: D.K. Edmond; 1999:12-16.
11. Bradford J.A.A, Giles W.M. Teenage pregnancy in western Sydney. Aust N Z J Obstet Gynaecol 1989; 29: 1-4.
12. Birch D. Schoolgirl pregnancy. In: Progress in Obstetrics and Gynaecology. Editor: John Studd 1989;7: 75-90.

Table 1: Maternal Age and Height

Maternal Age					
	15-19		20-24	P-value	
Mean ± SD	17.8 ± 1.2		21.5 ± 1.4	<0.001	
Age (yrs)	n	%	Age (yrs)	n	%
14	2	1.3	20	90	37.5
15	7	4.5	21	38	15.8
16	15	9.6	22	45	18.8
17	18	11.5	23	44	18.3
18	61	39.1	24	21	8.8
19	53	34.0	25	2	0.8
Total	156	100.0	135	240	100.0

Maternal Height				
	15-19		20-24	P-value
Mean ± SD	155.2±3.3		155.5±3.8	<0.35 (ns)
Height (cm)	n	%	n	%
=150	3	1.9	14	5.8
151-155	89	57.1	133	55.4
156-160	57	36.5	75	31.3
161-165	7	4.5	15	6.3
166-170	-	-	3	1.3
Total	156	100.0	240	100.0

Table 2: Haematocrit level of booking and after delivery

At booking				
	15-19 n=85		20-24 n=141	P-value
Mean ± SD	30.4 ± 2.3		31.2 ± 2.6	<0.02 (s)
Haematocrit (%)	n	%	n	%
25-29	25	29.4	37	26.2
= 30	60	70.6	104	73.8
Unbooked	71	45.5	99	41.3
48 Hours After Delivery				
Mean ± SD	27.3±3.1		27.8 ± 3.5	<0.001 (s)
Haematocrit (%)	n	%	n	%
<30	122	78.2	162	67.5
= 30	34	21.8	78	32.5
Total	156	100.0	240	100.0

Table 3: Mode of Delivery and Birth weight

Mode of Delivery				
	15-19 yrs		20-24 yrs	
Mode of delivery	n	%	n	%
SVD	113	72.4	169	70.4
Breech	4	2.6	7	2.9
Vacuum /forceps	21	13.5	35	14.6
CS	16	10.3	26	10.8
Destructive op	2	1.3	3	1.3
Total	156	100.0	240	100.0
Birth weight				
	15-19 yrs		20-24 yrs	P-value
Mean BW ± SD (g)	2800 ± 500		2900 ± 700	0.2 (NS)
Birth weight	n	%	n	%
500-999	-	-	4	1.7
1000-1999	17	10.9	26	10.8
2000-2499	28	17.9	17	7.1
2500-2999	70	44.9	92	38.3
3000-3499	34	21.8	85	35.4
3500-3999	6	3.8	12	5.0
= 4000	1	0.6	4	1.7
Total	155	100.0	240	100.0

Table 4: Complications of Labour and Delivery

	15-19 yrs		20-24 yrs			
	n	%	n	%	X^2	P Value
Pre-eclampsia/eclampsia	9	5.8	17	7.1	0.71	0.3987
PROM	1	0.6	2	0.8	0.05	1.0000
Preterm Delivery	5	3.2	8	3.3	0.00	0.9442
APH (Placenta Praevia)	-	-	4	1.7	0.68	0.6526
IUFD/SB	4	2.6	4	1.7	0.38	0.7173
CPD	23	14.7	57	23.8	4.76	0.0300
Ruptured Uterus	1	0.6	2	0.8	0.05	1.0000
Birth Asphyxia	5	3.2	12	5.0	0.74	0.3892
PPH	2	1.3	1	0.4	0.94	0.5644

PROM –Premature Rupture Of Membranes.
APH -Ante-Partum Haemorrhage
IUFD/SB- Intra-Uterine Foetal Death/Still Birth
CPD- Cephalo-Pelvic Disproportion
PPH- Post Partum Haemorrhage
SVD- Spontaneous Vertex Delivery
CS- Caesarean Section