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Prevalence and outcome of pregnancy among elderly primigravidae in a Nigerian tertiary hospital: A five year review

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Abstract
Background: the proportion of women having their first delivery at "advanced maternal age" is on the increase due to delayed child bearing among some woman in pursuit of education and carrier. Maternal age at first pregnancy is a determinant factor that could affect pregnancy outcome. Woman aged 35years and above undergoing their first pregnancy are often considered to be at increased risk of adverse maternal and perinatal outcomes compared to their younger counterparts.
Objectives: To determine the prevalence of elderly primigravidae and compare their pregnancy outcome with their younger counterparts at the Usman Dan Fodio University Teaching Hospital, Sokoto (UDUTHS) Nigeria.
Materials And Methods: These was a retrospective case control study comparing the pregnancy outcome of primigravid mothers aged 35years and above with those of younger pregnant women aged less than 35years who delivered at UDUTHS between January 2017 to December 2021.
Results: There were 9622 deliveries during the period under review, out of which 236 were primigravidae. Elderly primigravidae constituted 9.3% (n=22) while the younger ones were 90.7 % (n=214). The prevalence of elderly primigravidae was 0.2%. The elderly primigravidae were more prone to pre-eclampsia and ante partum haemorrhage compared to younger primigravidae. There was statistically significant higher caesarean section rate (x^2=15.1, P value =0.02) among the elderly primigravidae compared to the younger counterparts. There was no significant differences in the other maternal and fetal outcome.
Conclusion: The prevalence of elderly primigravidae in this study was 0.2%. They were at increased risk of pre-eclampsia and caesarean deliveries than their younger counterparts. However, there was no significant difference in the fetal outcome among the study groups.

Keywords: elderly primigravida, prevalence, younger primigravida, obstetrics and neonatal outcome

Introduction

Pregnancy, though a physiologic process also comes with its complications. Maternal age is an important determinant of the outcome of pregnancy and both extremes of ages are known to be associated with adverse maternal and perinatal outcome [1, 2] The elderly primigravida is a woman who is carrying her first pregnancy at the age of 35years or more [1, 3]. In recent time woman aged 35 years and above undergoing their first pregnancies have been on the increase [1, 3]. A number of factors might be responsible for this trend such as; pursuit for higher education and carrier which have made many woman to delay child bearing until they are in their late 30s. Advances in assisted reproductive technology (ART), and increase in the rate of devoice followed by remarriage, all contributed to this upward trend [1, 4]. Available literature suggest that 0.5% to 10% of pregnancies occur at the age of 35 years or more depending on locality and the population in question [4, 5]. This trend of delayed child birth have been reported to be more prevalent in developed world, while studies in developing countries such as Nigeria reported an incidence of 0.5-1.4% [6, 7]. Research has shown that maternal age 35 years and above is associated with medical conditions like hypertensive disorders of pregnancy, diabetes mellitus as well as obstetric complications such as; miscarriages, premature rupture of membranes, abnormal presentation, prolonged labor, preterm labor, ante partum hemorrhage and operative interventions [8, 9].
Although, several researchers in both low and high income countries have in the past reported pregnancy outcome among elderly primigravidae, there is need for a more recent update on this topical issue especially this center as no data is available. Therefore, this study was conducted with the aim of finding out the prevalence and outcome of pregnancy among elderly primigravidae in our centre.

Materials and Method

This was a retrospective case control study comparing the pregnancy outcome of primigravid mothers aged 35 years and above with those of younger ones aged less than 35years who delivered at UDUTHS between January 2017 to December 2021. The case notes were retrieved from the ante natal clinic and labor room registry. Data regarding social demographic characteristic such as; age, educational status, occupation, religion, tribe, pregnancy complications, intra/postpartum complications, mode of delivery and neonatal outcome were

extracted. The information was coded and transferred onto a proforma designed for the study. It was then transferred onto the SPSS software, version 20 and analyzed. The Chi square X^2 and student T test were used for comparison of the two groups. Statistical significance was set at P value of <0.05 at 95% confidence interval.

Results

There were 9622 deliveries during the period, out of which 236 were primigravidae. The elderly primigravidae constituted 9.3% (n=22) while the younger ones accounted for 90.7 % (n=214). The prevalence of elderly primigravidae was 0.2% . The mean age for the elderly primigravida was 35.6 ± 0.9 years while that for their younger counterparts was 22.9 ± 3.6 years.

Table 1 shows the comparison of the sociodemographic characteristics between primigravidae less than 35 years and elderly primigravidae. A higher percentage of elderly primigravidae (25%) were business women compared to 11.7% and 5.6% that were civil servants and unemployed respectively. There was a statistically significant association between occupation and the two categories (χ^2= 7.4,*p* value = 0.03). However, there was no such association between their educational status (χ^2= 2.0, *p* value = 0.6).

A higher percentage of the elderly primigravidae were Igbos, and there was significant association between tribe and the category of primigravida (χ^2= 11.5, *p* value =.0.006). Similarly, a higher percentage of elderly primigravidae were Christian and there was significant association between religion and category of primigravida. This is shown on Table 1 below.

Table 1: Sociodemographic characteristics of the cases

Characteristics	Primigravida less than 35 years n (%)	Elderly primigravida n (%)	χ^2	*p* value
Occupation				
Unemployed	119(94.4)	7(5.6)	7.4	0.03*
Civil servant	83 (88.3)	11 (11.7)		
Business	12(75.0)	4 (25.0)		
Educational status				
Non-formal	14(93.3)	1(6.7)	2.0	0.6
Primary	19 (95.0)	1 (5.0)		
Secondary	87 (92.6)	7 (7.4)		
Tertiary	94 (87.9)	13 (12.1)		
Tribe				
Hausa	169 (93.9)	11 (6.1)	11.5	0.006*
Yoruba	13 (92.9)	1 (7.1)		
Igbo	26 (74.3)	9 (25.7)		
Others	6(85.7)	1(4.3)		
Religion				
Islam	174 (94.1)	11 (5.9)	11.5	0.001*
Christianity	40 (78.4)	11 (21.6)		

Majority of the cases in both groups were booked for antenatal care. This is shown on figure 1.

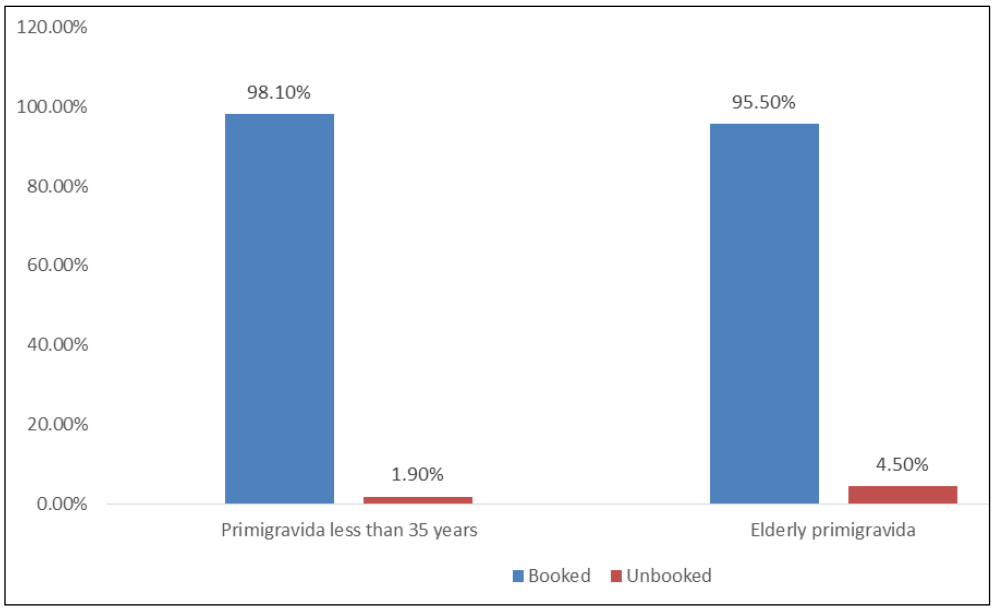

Fig 1: Booking status among primigravidae less than 35 years and the elderly ones.

There was no fetal complication identified among both groups though a higher percentage of neonatal intensive care admission was seen among the elderly primigravidae (4.5% versus 1.9%). There was no statistically significant association between the fetal complications among the 2 groups (χ^2=0.689, *p*=0.390). This is shown on figure 2.

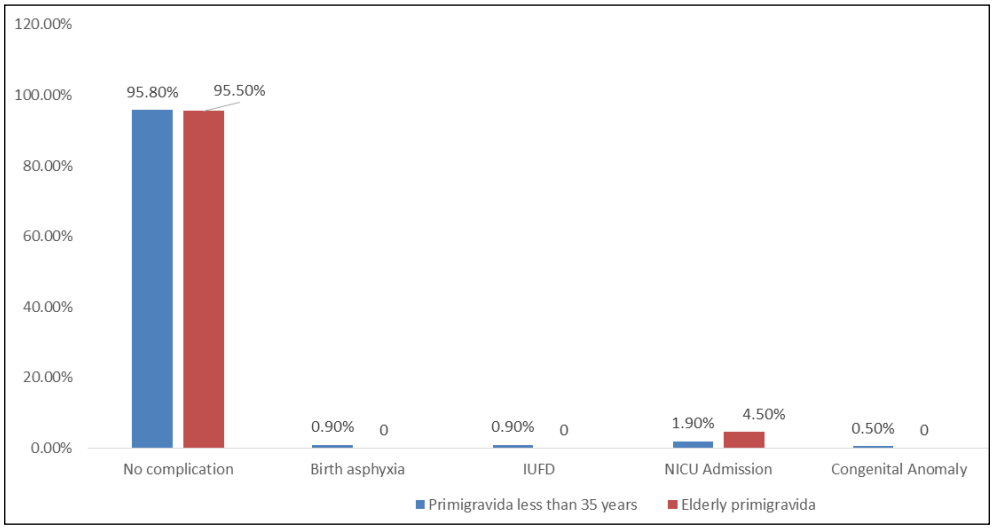

Fig 2: Fetal complications among primigravidae less than 35 years and the elderly primigravidae.

Majority of the primigravidae less than 35 years had spontaneous vaginal delivery (SVD). Among the elderly primigravida, 31.8% had caesarean section compared to only 7% of the primigravidae less than 35 years. There was statistically significant association between the category of primigravidae and caesarean section (χ^2= 15.1, *p* value = 0.02). However, there was no such association between the categories and pregnancy complication (χ^2= 9.6, *p* value = 0.14). This is shown on Table 2.

Table 2: Pregnancy outcome and maternal complications between primigravidae less than 35 years and the elderly.

Variables	Primigravidae less than 35 years		Elderly primigravidae		Test Statistics
	n	%	n	%	
Pregnancy outcome					χ^2=15.1 P=0.02*
SVD	179	83.7%	13	59.1%	
C/S	15	7.0%	7	31.8%	
Instrumental Delivery	2	0.9%	0	0	
Induction of Labour	16	7.5%	2	9.1%	
Miscarriage	2	0.9%	0	0	
Maternal Complication					χ^2 = 9.6 P=0.14
None	182	85.4%	19	86.4%	
Preeclampsia	0	0	3	1.4%	
Preterm Delivery	0	0	2	0.9%	
Antepartum Hemorrhage	0	0	6	2.8%	
Postpartum Hemorrhage	2	0.9%	2	9.1%	
Prom	12	5.6%	1	4.5%	
Breech Presentation	6	2.8%	0	0	

Discussion

The prevalence of elderly primigravidae from this study was 0.2 %. This was lower than 0.69 %, 1.4 % and 2.6 % reported from Edonyi, PortHarcoat and Nnewi respectively [4, 5, 10]. The lower prevalence of elderly primigravidae in this study compared to studies in the southern part of the country could be related to early age of marriage in this region. The people of Sokoto state are predominantly Hausa and Muslim, based on their culture and religion they venture into marriage at an earlier age and therefore start child bearing before they are 35 years.

This study showed that a higher percentage of elderly primigravidae (25%) were business women compared to 11.7% and 5.6% that were civil servants and unemployed respectively. There was statistically significant association between occupation and category of primigravida (x^2=7.4, P value= 0.03). However, unlike other studies, there was no statistically significant association between educational status and category of primigravidae.(X^2 2.0,p value =0.6) [1, 3, 11]

From our study, the Igbo ethnic group constituted the highest percentage of elderly primigravidae and there was significant association between tribe and the category of primigravida (X^2 =11-5,P value=0.006). Also, a higher percentage of elderly primigravidae were Christians and there was significant association between religion and category of primigravidae. These Igbos who are mainly Christians came from the southeastern part of Nigeria and settled in Sokoto with a preponderance for formal education. The pursuit for higher education and carrier perhaps contributed to the delay in starting child bearing among them. This finding was similar to what was reported in other studies from the southeastern part of the country [4, 5, 12].

This study demonstrated that elderly primigravidae were more likely to develop preeclampsia than their younger counterparts. Similarly, the prevalence of antepartum haemorrhage was higher among elderly primigravidae in this study which is in conformity with other studies[1, 3, 15]. The increase incidence of medical disorders in pregnancy with increasing maternal age, especially hypertensive disorders may pre dispose the older women to having abruptio placental. However, there was no statistically significant association between category of primigravida and pregnancy complication (X^2=9.6, P value = 0.1).

The incident of caesareans section among the elderly primigravidae was higher than among the younger group in this study. This was similar to report from other centers [1, 3, 4, 5, 10, 11]. This may be related to the higher rate of ante partum complications seen in this study such as hypertensive disorders of pregnancy and ante partum haemorrhage which may necessitate caesarean delivery. Moreover, concern about maternal age as a cause of increase maternal and perinatal morbidity and mortality has made the routine recommendation of elective caesarean section for this women in the past and this tradition has been maintained by some caregivers [1, 3].

Like most studies in the country, there was no significant instrumental delivery among the elderly primigravidae compared to younger primigravidae [1, 3, 4, 5]. This is contrary to a report from a study outside the country [13]. The rate of instrumental delivery in the country is low which may be as a result of lack of experienced personal for these procedures [1, 13]. Most of obstetricians prefer caesarean section for an elderly primigravida rather than taking the risk of an instrumental delivery.

The fetal outcome among the elderly primigravidae varies from one center to another, while some studies reported a poor outcome, others did not [1, 3, 14]. However, the perinatal outcome was not significantly different between the two groups in this study. Similar finding was reported in some studies within the country [1, 3, 15].

Conclusion

The prevalence of elderly primigravidae in this study was 0.2%. They are at increased risk of pre-eclampsia and caesarean deliveries. However, there was no significant difference in the fetal outcome among the study groups.

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