

Socio-Demographic Profile of Booked Elderly Nulliparous Pregnant Women and Pregnancy Outcome At The University of Calabar Teaching Hospital, Calabar, Cross River State, Nigeria

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Abstract— Background: Cultural dictates expect the females to marry early, in most cases and in some communities as virgins, for them to maintain matrimony respect from the husband's family. Most women delay their pregnancies or become pregnant at advanced ages and are confronted with some challenges associated with pregnancies at the extremes of life. Pregnant women are generally encouraged to book early for antenatal care so that those with underlying medical conditions can be detected early and managed appropriately to prevent adverse effect on the pregnancy and also to reduce possible morbidity and mortality. Fertility tends to decrease with increasing maternal age, so may the pregnancy outcome be complicated.

Objectives: This study intends to find out the obstetric characteristics and mode of delivery and delivery outcome of elderly nulliparous or elderly primigravidae who booked at this centre for antenatal care. It also intends to find out the obstetric characteristics of such patients by assessing their age at booking, the mean gestational age at booking, the reasons for delayed pregnancy and delivery and fetal outcome.

Methodology: This was a prospective study carried out on pregnant women carrying their first pregnancy to the point of booking for ante natal care at or more than 35 years of age. It was a self administered structured questionnaire and directly administered at booking and followed till delivery over a 1 year period. This prospective study was carried out at the University of Calabar teaching Hospital from June 2017 to June 2018. Those carrying multiple pregnancies were excluded from the final analysis to remove biases, since pregnancy changes are exacerbated in multiple pregnancies.

Results: A total of 3,298 pregnant women booked for antenatal care (ANC) during the study period. Of this figure, 218 (6.6%) were elderly primigravidae and elderly nulliparous, while 3,080 (93.4%) were Para 1 and above or below 35years of age. 132 (4.0%) were elderly nulliparous women while 86 (2.6%) were elderly primigravidae. The mean age at booking was 36.3 years. The earliest gestational age at booking was 8-12weeks and did constitute 88(39.8%). Of the 218 cases studied, 30 (13.8%) had spontaneous vaginal delivery. Instrumental delivery (forceps and vacuum) constituted 11.1%. Majority of delivery was 142(65.2%) by caesarean section, either elective or emergencies. The most common medical

complication associated in elderly gravida was hypertensive disorders of pregnancy 21.8%, with cervical incompetence being the least 12 (5.5%) of 218 and was noticed more among the elderly nulliparous. The fetal outcome is comparable to that of the normal population. 259 (83.0%) of the babies were delivered with good Apgar scores and needed no further intervention.

Conclusion

The human body is physiologically well adapted to procreate during the reproductive age (15-45years). Pregnancies carried at the extremes of life are however saddled with complications of either the pregnancy itself or other co morbidities. It is however not uncommon to see women carrying pregnancies after the age of 35. Most women delay marriage or child bearing due to pursuit of educational carrier, need for economic self independence, cultural reasons where one cannot marry before a senior sibling, prolonged treatment for infertility, cost of assisted reproduction and maybe unstable or unsuitable relationships.

Index Terms— elderly nulliparous, booking, delivery .

I. INTRODUCTION

Elderly primigravidae are women who conceive for the first time and intend to carry the pregnancy till delivery at 35 years and above. It is the desire of majority of women to conceive and give birth to an offspring of their own. The term 'elderly primigravida' is often used loosely in clinical practice, but in 1958 the Council of the International Federation of Obstetricians and Gynecologists (FIGO) adopted a definition specifying the age of 35 years or more. Although one study considered the woman of 25 years and above in her first pregnancy as an "elderly primigravida," [1] others introduced the term "mature primigravida" as a suitable alternative to elderly primigravida [2]. Antenatal care is designed not only to provide safe pregnancy and delivery, but also to provide good health, crate awareness and enlighten the expectant mother on the benefits of antenatal care services. Unlike in northern parts of Nigeria where teenage marriage is common, females in the south may delay marriage till over the age 35. Many studies showed this group of women to be at high risk of complications including pregnancy-induced hypertension, diabetes mellitus, induction of labour, instrumental deliveries, malpresentation, malposition, prolonged labour, increase cesarean section rate due to poor maternal efforts or fetal distress, ante partum and post partum hemorrhages.[3-8] Apart from the increased incidence of cesarean section in

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elderly primigravida, other studies have indicated no additional risk with advancing maternal age in this group of women, and should therefore not be managed as high risk, and conservative management of elderly primigravida with modern perinatal management is justified and very effective [9-11].

The care of women during pregnancy and delivery has been viewed as important instruments in the reduction of maternal morbidity and mortality, as well as perinatal morbidity and mortality. Some of the benefits of booking early for antenatal care include, early confirmation of pregnancy, its location and number of fetuses; proper estimation of expected date of delivery, (especially where the last menstrual period is uncertain) to prevent inadvertent prematurity or post maturity; evaluation for risk factors and maternal medical conditions that may adversely affect the index pregnancy; early baseline clinical and laboratory investigations upon which further follow up may be based.

The purpose of this study was to examine the pregnancy outcome in elderly primigravidae and elderly nulliparous, especially in the background of increasing numbers of these patients in our facility. This review highlights the effects on maternal age on obstetrics and perinatal outcome. Complications have been associated with increasing maternal age, including abnormal weight gain, obesity, gestational diabetes, chronic and pregnancy induced hypertension, ante partum haemorrhage, placenta previa, multiple gestations, prelabour rupture of membranes, and preterm labour⁽¹⁰⁾. Women of advancing reproductive age are now responsible for a greater percentage of total live births [11].

In a study done by Martin and Hamilton in the United States, more than 13% of all births are to women 35 years and older, and 22% of these births are to first time mothers [12]. In another study done in United States by Freeman-Wang and Beski, 2002, showed that the current trend to older maternal age at first birth will continue, and some researchers anticipate that the “elderly primigravida” will become the norm [13] in this study the factors found to be responsible for the delay in childbearing included women pursuing higher education and a career, expanded roles for women in the work place, the need for dual incomes, postponed at second marriages. In a study carried out in the United States of America, the age at first birth among 45.5% of female college graduates was 30 years and over. The older the women, the higher the risk and abnormalities in the child leading to Down's syndrome, premature baby, and low birth weight baby. [14-15]

II. SUBJECTS AND METHOD

This was a prospective questionnaire based study administered to respondents who booked at the antenatal clinic of the University of Calabar Teaching Hospital, Calabar between June 2017 and June 2018. This hospital, situated in Calabar (the capital city of Cross River State) is the only tertiary hospital in the state. The Obstetrics and Gynaecology department runs obstetric emergencies as well as specialized care. Women are given health talks every day in the clinic especially about adverse pregnancy conditions and how to recognize them and present early for care. At booking the following informations are obtained from the patient: name, age, address, occupation, educational status, marital status, last menstrual period (LMP), expected date of delivery (EDD) is calculated, number of past and present pregnancies and their outcomes, and in a subtle way, the reason(s) for delay in becoming pregnant.

III. RESULTS

A total of 3,298 pregnant women booked for antenatal care (ANC) during the study period. Of this figure, 218 (6.6%) were elderly primigravidas and elderly nulliparous, while 3,080 (93.4%) were Para 1 and above or below 35years of age. 132 (4.0%) were elderly nulliparous women while 86 (2.6%) were elderly primigravidas. Of the 218 cases studied, 16(7.3%) needed inductions of labour, 14 (6.4%) had spontaneous vaginal delivery, 142 (65.1%) delivered by caesarean section, 24(11.0%) had instrumental delivery (forceps or vacuum). The most common medical complication associated with elderly gravida was hypertensive disorders of pregnancy 50(22.9%), obesity 34 (15.6%), Anaemia 20(9.2%), ante partum haemorrhage 15(6.9%), pregnancy induced Diabetes mellitus 13(6.0%), and cervical incompetence 12(5.5%). The fetal outcome is comparable to that of the normal population. 259 (83.0%) of the babies were delivered with good Apgar scores and needed no further intervention. The birth asphyxiated babies 9(2.9%), preterm 18(5.8%) and growth restricted babies 8(2.6%) were admitted into the special care baby's unit (SCBU) for observation and further treatment. There were however 4(1.2%) intrauterine fetal demise from suspected cord accident and abruptio placenta. No maternal death was recorded from the group during the study period.

Table 1- age distribution at booking

Age	Frequency	Percentage (%)
35	78	35.8
36	54	24.8
37	38	17.4
38	24	11.0
39	14	6.4
≥40	10	4.6
	218	100

Table 2- distribution by pregnancy

Age	Primigravida	Nulliparous	Combined %
35	8 (9.3%)	70 (53.0%)	31.1
36	18 (20.9%)	36 (27.3%)	24.1
37	24 (27.9%)	14 (10.6%)	19.3
38	16 (18.7%)	8 (6.1%)	12.4
39	12 (13.9%)	2 (1.5%)	7.7
≥40	8 (9.3%)	2 (1.5%)	5.4
	86 (100%)	132 (100%)	100%

Table 3-socio demographic parameters

Variables	Primigravida n=86	Nulliparous n=132	Average %
Educational status			
Primary/junior school	24 (27.9%)	24 (18.2%)	23.0
Higher/senior secondary	16 (18.6%)	28 (21.2%)	19.9
First degree	18 (20.9%)	32 (24.2%)	22.6
Higher degree	28 (32.6%)	48 (36.4%)	34.5
Occupation			
Trader	8 (9.3%)	24 (18.2%)	13.8
Civil/public servant	24 (27.9%)	44 (33.3%)	30.6
Banker	28 (32.6%)	28 (21.2%)	26.9
Academics	18 (20.9%)	12 (9.1%)	15.0
Business	8 (9.3%)	24 (18.2%)	13.7
Gestational age at booking			
<8weeks	20 (23.3%)	22 (16.7%)	20.0
8-12weeks	32 (37.2%)	56 (42.4%)	39.8
13-17weeks	18 (20.9%)	24 (18.2%)	19.5
18-24weeks	10 (11.6%)	18 (13.6%)	12.6
25-28weeks	4 (4.7%)	12 (9.1%)	6.9
>29weeks	2 (2.3%)	0 (0.0%)	1.2
Method of achieving conception			
Spontaneous	58 (67.4%)	64 (48.5%)	58.0
Assisted reproduction	12 (14.0%)	18 (13.6%)	13.8
After pelvic surgery	14 (16.3%)	26 (19.7%)	18.0
After treatment male partner	2 (2.3%)	24 (18.2%)	10.2

Table 4- medical complications and mode of delivery/ fetal outcome

Mode of delivery	Primigravida	Nulliparous	(Combined) %
Spontaneous delivery at term	4 (4.70%)	10 (7.6%)	6.4
Induction of labour	8 (9.3%)	8(6.1%)	7.3
Instrumental:			
Forceps	4 (4.7%)	6 (4.5%)	4.6
Vacuum	6 (7.0%)	8 (6.1%)	6.4
Emergency caesarean section	26 (30.2%)	34 (25.8%)	27.5
Elective caesarean section	30 (34.9%)	52 (39.4%)	37.6
Assisted breech delivery	2 (2.3%)	2 (1.5%)	1.8
Preterm delivery	6 (6.9%)	12 (9.1%)	8.3
Maternal complications			
Uneventful pregnancy	45(52.3%)	29(21.9%)	33.9
Hypertensive disorders:			
Pre eclampsia	12(14.0%)	32(24.2%)	20.2
Eclampsia	2(2.3%)	4(3.0%)	2.8
Diabetes mellitus	4(4.7%)	9(6.8%)	6.0
Obesity	10(11.6%)	24(18.2%)	15.6
Anemia in pregnancy	8(9.3%)	12(9.1%)	9.2
Cervical incompetence	2(2.3%)	10(7.5%)	5.5
Ante partum haemorrhage	5(5.8%)	10(7.6%)	6.9

Table 5-fetal outcome

Variables	frequency	Percentage %
Healthy babies, good Apgar scores	259	83.0
Preterm birth	18	5.8
Fetal macrosomia	14	4.5
Birth asphyxia	9	2.9
Intra uterine growth restriction	8	2.6
Intra uterine fetal demise	4	1.2

IV. DISCUSSION

Women of advanced maternal age above 35 years, who are reaching their first pregnancy at this time of decreasing fertility, often have suffered years of infertility. Hence, these pregnancies are usually considered as “Precious or Premium

pregnancies” by obstetricians and the patient as well. This may also influence the care and decision making in attempt to reduce the risks of adverse maternal or fetal outcome. Presently, fertility trends suggest an increasing number of women in developed countries delaying pregnancy and childbirth till their mid thirties and beyond ⁽¹⁶⁾. Women of advancing reproductive age are now responsible for a greater

percentage of total live births. [17]. These trend to older maternal age seems to be on the increase and will continue; as long as majority of women will desire to be called mothers at some point in their lives. Some researchers anticipate that the elderly primigravidae will become the norm with time as more women seek to position themselves in the home and society at large before childbearing.

A number of social, educational and economic factors might be responsible for this increasing trend. In recent times, women have changed their life styles such as in the pursuit of higher education and entry into work force and career advancement outside the home. The primigravida, by definition, are those carrying the index pregnancy as their first. This study shows that majority of the primigravida clustered around 37years 24(27.9%). When compared to the nulliparous, that is, those who have been pregnant at least once or more times, but have never given birth, this study showed that majority of them are about 35years 70(53.0%), table 2.

Increasingly, majority of women are considering delaying the time of first birth in order to complete their education and to make progress in their careers and other pursuits.[18-19] The present trend indicates that there is a significant increase in the number of women of age 25 to 44 years participating in work force and entrepreneurship. Advances in assisted reproductive technology (ART), delay in marriage, waiting for the right quality of spouse and increase in the rate of divorce followed by re-marriage, all contribute to the upward trend of delayed childbirth. ⁽¹⁹⁾ This study confirmed the progressive decreasing fertility age of 35 years from 78(35.8%) to 40 years and above 10(4.6%), table 1.

With more women postponing childbearing until their later reproductive years, there is increased awareness and concern among women and health care providers about the effects of advancing maternal age on both maternal and fetal morbidity and mortality. [20] In this study, it was discovered that primigravida and nulliparous quest for higher education contributed to 28(32.6%) and 48(36.4%) respectively, giving a combined total of 86(69.0%) as a major factor in delaying childbearing. On the average 57.5% of the respondents were either civil or public servants or took up career as bankers. These professions could be very demanding, for example, in the banking sector, a female employee is mandatorily made to spend a minimum of 5 years before she can be allowed to marry. Most women will want to be an income earner before venturing into marriage as a source of dual income for the family and secondly not to be over dependent on the spouse.

Generally, most women will want to register for ante natal care (ANC) as early as possible in their first pregnancy due to inexperience about pregnancy and its physiological changes in the body. In this study, 58.9% of the women booked in the first trimester. Those who booked much later were still in a state of disbelief if they were indeed pregnant or those who were yet undecided whether to keep the pregnancy or not. Only 2 of the primigravidae or on the average 1.2% of the total population booked in the third trimester after receiving some medical attention from friends or relatives. A combination of 28.2% of the women under study became

pregnant following pelvic surgery (18.0%) or treatment of male partner (10.2%).

Assisted reproductive technology is now readily available and is becoming affordable as more centers are opened. 13.8% of the study population became pregnant following assisted reproduction. This is a significant contributory factor in overcoming this challenge because as more centers are opened, the procedure will likely become more affordable and thus more couple will benefit. Elderly primigravidae or nulliparous who were healthy and had no medical or obstetrics issues were allowed to try vaginal delivery and 30(13.8%) had vaginal delivery either spontaneously or following induction of labour.

There is a declining use of instrumental delivery especially in the hands of the less experienced, hence the low use of forceps or vacuum in this study. The major mode of delivery of elderly primigravidae and elderly nulliparous women was by caesarean section, contributing 65.1% of the total deliveries. Elective caesarean section was 37.6% of this number with the major indication been placenta previa, medical conditions and patient's request for caesarean section. 27.5% was for emergency caesarean section, with the major indications been ante partum haemorrhage, fetal distress, and poor progress in labour due to cephalo pelvic disproportion. Breech presentations in nulliparous women are generally delivered by elective caesarean section but those detected in advanced stage of labour are delivered by assisted breech delivery. In this study, 4(1.8%) were delivered as assisted breech delivery.

It is well established that advancing maternal age is associated with chromosomal abnormalities, sub fertility, fibroids and multiple gestation. Other adverse outcome that occurs more frequently in older women include ante partum haemorrhage, pregnancy induced hypertension, obesity, cervical incompetence and fetal distress in labour warranting emergency interventions by caesarean sections. According to Eke and Eleje in a study at Nnewi, Nigeria, elderly primigravidae had a significantly higher incidence of postpartum hemorrhage, cephalo-pelvic disproportion, preeclampsia, preterm labour and they were also at higher risk of episiotomy to aid delivery at second stage of labour. [21]

In a historical cohort study by Tabaharoen et al conducted to examine the pregnancy outcome in women aged 40 years or older showed that the older group had more medical and obstetric complication (diabetes mellitus, chronic hypertension, mal-presentation, pregnancy included hypertension, placenta praevia, multiple pregnancies, preterm labour, fetal distress, retained placenta, post partum haemorrhage and endometritis), more adverse fetal outcomes (low birth weight, low Apgar Scores and congenital anomalies) and a higher caesarean section rate. [22]

V. CONCLUSION

In this study, only a small percentage (3.4%) of the primigravidae was aged 35 years and older. This was in contrast with the study done in the United States by Martin, Hamilton and Venture [23] where more than 13% of all births were to women 35 years and older. Freeman-Wang and Heak

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also found higher proportion of elderly primigravidae [13] According to Onoja, et al, lower proportion of elderly primigravidae found in this study in Jos, plateau state, north central, Nigeria could be as a result of the cultural practice in this part of the world where early marriage is the practice of the majority of the populace. [24] In this study, it was found that more than half of the elderly primigravidae had tertiary education which contributed to their delay in first child birth. This finding was consistent with the finding of Heck et al and Mosher et al where the age at first child birth of the female college graduate in the United States was 30 years and older.

[26] Onoja, B, Onoja, K. O, Ekwempu, C C. Obstetric performance of elderly primigravida in Jos University Teaching Hospital, Jos, Nigeria. *Jos Journal of Medicine*, 9; 1(30) 2012

REFERENCES

- [1] Ojo, A, Oronsaye, U. Who is the elderly primigravida in Nigeria?. *Int J Gynaecol Obstet* 1988; 26(1): 51-55.
- [2] Sivalingam, N, Avalani, C. The elderly primigravida evaluation of 90 cases. *Singapore Med J* 1989; 30(5): 460-465.
- [3] Anate, M, Akeredolu, O. Pregnancy outcome in elderly primigravida at University of Ilorin Teaching Hospital, Nigeria. *East Afr Med J* 1996; 73(8): 548-551.
- [4] Bianco, A, Stone, J, Lynch, L, et al. Pregnancy outcome at age 40 and older. *Obstet Gynecol* 1996; 87(6): 917-22.
- [5] Chan, B C, Lao, T T. Influence of parity on the obstetric performance of mothers aged 40 years and above. *Hum Reprod* 1999; 14(3): 833-837.
- [6] Urquhart, D R, Tai, C. Obstetric performance in the elderly Malaysian primigravida. *Asia Oceania J Obstet Gynecol* 1991; 17(4): 321-325.
- [7] Schols, H S, Hass, J, Petru, E. Do Primiparas aged 40 years or older carry an increased obstetric risk?. *Prev Med* 1999; 29(4): 263-266.
- [8] Edge, V, Russell, K, Laros, Jr. Pregnancy outcome in nulliparous women aged 35 or older. *Am J Obstet Gynecol* 1993; 168: 1881-1885.
- [9] Seufert R, Casper, F, Krass, A, Brockerhoff, P. The older primipara- an obstetrical risk group?. *Zentralbl Gynakol* 1994; 116(3): 169-172.
- [10] Blickstein, I, Lancet, M, Kessler, I. Re-evaluation of the obstetrical risk for the older prim. *Int J Gynaecol Obstet* 1987; 25(2): 107.
- [11] Ales, K L., Druzin, M L., Santini, D L. Impact of advanced maternal age on the outcome of pregnancy. *Surg Gynaecol Obstet* 1990; 171(3): 209.
- [12] Buehler, J W., Smith, J C., Rochat, R W. Maternal mortality in women aged 35 years or older. *JAMA* 1986; 255: 53-57
- [13] Mehrnoosh A, Freeman-Wang T, Atallah I. The older obstetric patient. *Obstetrics*,
- [14] *Gynaecology and Reproductive medicine*. 2008; 18(2): 43-48.
- [15] Seoud M, Nassar AH, Usta IM, Melhem Z, Kazma A, Khalil AM. Impact of
- [16] Maternal Age on Pregnancy Outcome. *Am J Perinatol*. 2002; 19: 1-7.
- [17] Smeeton NC, Rona RJ, Dobson P, et al. Assessing the determinants of stillbirths and early neonatal deaths using routinely collected data in an inner city area. *BMC Med* 2004; 2: 27
- [18] T'sang-T'ang, H., Jui-Der, L., Jenn-Jeih, H., Liang-Ming, L., Szu-Fu, C., Tai-Ho, H. Advanced maternal age and adverse perinatal outcomes in an Asian population. Original Research Article *European Journal of Obstetrics & Gynecology and Reproductive Biology* 2010; 148(1):21-26.
- [19] Yariv, Y., Nir, M., Ron, B., Kinneret, T., Gadi, B., Avi, B. Pregnancy outcome at extremely advanced maternal age. *Am. J. Of Medicine*. 2010; 203(6): 558.
- [20] Rachana, C. Problems of Older Maternal Age and Pregnancy Outcome in *Bahrain Medical Bulletin* 2004; 26:3
- [21] Ziadeh S, Yahya A. Pregnancy outcome at the age 40 and older. *Arch Gynecol Obstet*. 2001; 265: 30-33
- [22] Orji, E O., Ndububa, V I. Obstetric Performance of Women Aged over Forty Years. *East African Medical Journal*. 2004; 81(3): 139-141.
- [23] Eke, A C., Eleje, and G.U. The pregnancy outcome in elderly primigravida: five year FIGO 2009
- [24] Tabcharoen C, Pinjaroen S, Suwanrath C, Krisanapan O. Pregnancy outcome after age 40 and risk of low birth weight. *Obstet Gynaecology* 2009; 29 (5): 378-383.
- [25] Hamilton BE, Martin JA, Sutton PD. Births: preliminary data for 2002. *National Vital Statistics Reports*. Vol 51, no. 11. Hyattsville (MD): National Center for Health Statistics; 2003