

**PREGNANCY OUTCOME AMONG GRAND MULTIPAROUS WOMEN IN A TERTIARY HOSPITAL IN ABUJA****Dr. Jibrin I. B., Dr. Isah A. Y. and Dr. Abdullahi I. H.***

Department of Obstetrics and Gynaecology, University of Abuja Teaching Hospital, Abuja.

***Corresponding Author: Dr. Abdullahi I. H.**

Department of Obstetrics and Gynaecology, University of Abuja Teaching Hospital, Abuja.

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ABSTRACT

Background: Grandmultiparity is believed to be associated with increased risk of poor maternal and perinatal outcomes. It is a source of anxiety for the obstetrician who is always on His/her toes to ensure that these complications are averted or reduced to the barest minimum. **Objective:** To evaluate the pregnancy outcomes among grand-multiparous women compared with those of multipara at the University of Abuja Teaching Hospital, Abuja. **Materials and Methods:** This was a two (2) year retrospective, case-control study of outcome of pregnancy in 182 grand-multiparous women at university of Abuja Teaching Hospital, Abuja between January 1st, 2013 and December 31st, 2014. Relevant information was retrieved from labour, postnatal, and neonatal ward records as well as theatre records. The results were presented and discussed using simple percentages. A p-value < 0.05 was considered statistical significant. **Results:** There were a total of 3,469 deliveries during the study period with 182 (5.3%) of these women as grand-multiparous women. The mean age was 33.0 ± 5.7 years with the modal age group as ≥ 35 years (44%). Hypertensive disorder (7.7%) was the commonest medical disorder in pregnancy among the study population. Ruptured uterus, abruption-placenta and postpartum haemorrhage were the commonest complications constituting 12.0% of all complications. The maternal mortality ratio was 3,333/100,000 live birth. **Conclusion:** Grand-multiparity and its complications remain a peculiar challenge in modern Obstetric practice with unimaginable high maternal and perinatal morbidity and mortality. Emphasis on female education and liberal use of family planning services should be strengthened to reduce high prevalence of grand multiparity and its attendant complications.

KEYWORDS: Grand-multiparity, maternal, perinatal, Pregnancy, Outcome, UATH.**INTRODUCTION**

Grand-multiparity is defined by the International Federation of Gynecology and Obstetrics (FIGO) as 5 deliveries or more.^[1,2] Solomon was the first to be credited with drawing attention to what he called 'the dangerous multipara' because of the ease of developing both medical and obstetric complications at frightening proportions with fatal consequences.^[3] Complications arising from grandmultiparity abound in literature within and outside the shores of Africa and numerous proven strategies to prevent such catastrophes are well documented and various strategies had been developed to curtail these untoward complications.^[4-8] Such complications leading to maternal mortality were said to be lowest with second pregnancy, under average in the third and fourth pregnancies, and steadily becoming greater in pregnancies in excess of four.^[3] The complications of grandmultiparity appears to have remained persistent in developing economies like ours.^[5-9] In the developed economies however, the economic and social implications of raising large families, high literacy level, the universal availability and the use of effective contraception backed with liberal abortion laws

and the use of improved health facilities ensuring survival of most parturient and their neonates have led to grand multiparity becoming a rare phenomenon and not as dangerous as believed.^[1,10] The incidence of grand multiparity in such developed countries ranges from 3% to 4%.^[1,10] The prevalence rate is higher in developing countries like Nigeria ranging from 8.7% in Calabar to 10.2% in Kano.^[5,7]

Many factors have been documented to be responsible for the increased hazards of high parity. As the patient is getting older, medical disorders like hypertension and diabetes, and other general conditions that are part of the normal ageing process are more likely to intrude themselves upon the clinical picture.^[11] Sociological factors have been shown to play a very important part, for the majority of these patients may be poor, illiterates and over worked. Many may have never fully regained a good blood picture, and anaemia may perpetuate itself from one pregnancy to the next without respite.^[6,12] They tend to feed their numerous children at the expense of their own nutrition, so that they are consequently often very short of vitamins and first class protein.^[13] The

desire for large families, male child preference, high perinatal and child mortality rates are some of the contributing factors to high parity seen in developing countries such as Nigeria.^[14] Male offspring are considered “precious” in such societies arising from a strong cultural role believes.^[8] The laws and traditions of inheritance favours male children, increasing the tendencies of who has none to continue to get pregnant until she probably gets one.^[8] High rate of early marriages and divorce as well as non-availability and poor utilization of contraceptive methods are other enabling factors for attaining high parity.^[8] Compounding factors includes but not limited to high prevalence of low socio-economic status, poor female literacy, social deprivation, poor health care infrastructure/delivery system, and non-utilization of available antenatal services.^[8,13] Life threatening complications such as abruption placentae, placenta previa, ruptured uterus and medical complications of pregnancy have been well documented in previous researches.^[8,15,16] Malpresentations are much more common among grandmultipara. The pendulous abdomen together with a high angle of pelvic inclination resulting from associated lordosis of the lumbar spine favour face and brow presentation and occipitoposterio position.^[13] Periodic review of outcome of high risk pregnancies such as grandmultiparity may be considered as veritable tools for assessing the effectiveness of emergency obstetric care and family planning services and hence the drive for this study in the Nation’s Capital City of Abuja, Nigeria. It is hoped that findings of this review may influence policy changes aimed at sustaining the gains of just concluded Millennium Development Goals (MDGs) and facilitating the actualization of Sustainable Development Goals (SDGs). The objective of this study is therefore aimed at comparing obstetric outcome and complications of grand- multiparous and multiparous women at the University of Abuja Teaching Hospital, Abuja.

MATERIAL AND METHODS

This was a retrospective study of outcome of pregnancies in 182 grand-multiparous women managed at University of Abuja Teaching Hospital, Abuja between January 1, 2013, and December 31, 2014. The pregnancy outcome of the grand-multiparous women was compared with those of multiparous women that attended the facility during the study period. The University of Abuja teaching Hospital is one of the tertiary hospitals in the Federal Capital Territory and serves the surrounding environs of Kogi, Nassarawa, Niger and Kaduna States. Socio-demographic and clinical data were obtained from labour, postnatal and neonatal wards records as well as, the theatre records. The information obtained were coded and transferred onto a proforma designed for the study. The data was analyzed using simple percentages, and inferential statistics were obtained using the Statistical Package for the Social Sciences (SPSS)

version 20.0 for windows. Statistical significance was set at the p value <0.05.

RESULTS

There were 182 grand-multiparous women among 3,469 total deliveries constituting 5.3%. While the multiparous women were 1,174 (33.8%), the Primiparous women constituted the remaining 60.9% during the study period. About 7% (13 women) of grand-multiparous women were age less than 25 years. While the modal age range among multiparous women was 25-29years, it was 35years and above for grand-multiparous women. Majority (62.1%) of the study population were booked for antenatal care (Table 1). Preterm labour was the most common complication in both groups, accounting for 12.6% and 8.8% in grand-multipara and multiparous women respectively. Diabetes mellitus was statistically more common among grand-multiparous women (P=0.012), (Table 2). Except for the Cephalo-pelvic disproportion that was significantly lower in the grand-multiparous women, all other recorded complications were comparable to those seen in multi-parous women (Table 3). There were 6 maternal death among the study subjects giving a maternal mortality ratio of 3333/100,000 live birth and significantly higher than 576/100,000 live birth recorded among the multiparous women (Table 4). All death from the study group were due to complications of Eclampsia while, Obstetric Hemorrhage was the main cause among multiparous women. There was no statistical significant difference between the recorded foetal complications for the two groups. More than 50% of pregnant women in both groups had spontaneous vagina delivery. Exploratory laparotomy was significantly higher among the study population (P=<0.001). About 9% of the deliveries were still births among the grandmultiparous women and relatively higher than the 6.3% found among the multiparous women. The difference however, was not statistically significant.

Table 1: Age Distribution And Booking Status.

Age (Years)	Multiparous N=1174(%)	Grandmultiparous N=182(%)
≤19	11 (0.9%)	0 (0.0%)
20-24	89 (7.6%)	13 (7.1%)
25-29	233 (19.8%)	40 (22.0%)
30-34	409 (34.8%)	49 (26.9%)
≥35	432 (36.8%)	80 (44.0%)
Booking Status		
Booked	899 (76.6%)	113 (62.1%)
Unbooked	275 (23.4%)	69 (37.9%)
Total	1174	182

Table. 2: Antepartum Complications.

Antepartum Complications	Multiparous (N=1174)	Grandmultiparous (N=182)	Chi-Square	P- Value
Hypertensive disorders of pregnancy	39 (3.3%)	14 (7.7%)	0.475	0.491
Heart Disease in Pregnancy	0 (0.0%)	1 (0.5%)	3.397	0.065
Diabetes Mellitus	1 (0.1%)	3 (1.6%)	2.273	0.012
Prelabour Rupture of Membranes	25 (2.1%)	3 (1.6%)	2.557	0.110
Preterm Labour	103 (8.8%)	23 (12.6%)	2.511	0.113
Placenta Praevia	4 (0.3%)	8 (4.4%)	13.651	<0.001
Abruptio Placenta	14 (1.2%)	4 (2.2%)	0.004	0.952
Total	186	56		

Table. 3: Intrapartum/Postpartum Complications.

	Multiparous N=66(%)	Grandmultiparous N=43 (%)	Chi-Square	P- Value
Cephalopelvic Disproportion	23 (2.0%)	1 (0.5%)	16.039	<0.001
Obstructed Labour	10 (0.9%)	8 (4.4%)	0.225	0.635
Ruptured Uterus	5 (0.4%)	7 (3.8%)	2.013	0.156
Cervical Laceration	2 (0.2%)	3 (1.6%)	0.927	0.336
Postpartum Haemorrhage	9 (0.8%)	11 (6.0%)	2.480	0.115
Retained Placenta	2 (0.2%)	5 (2.7%)	3.203	0.074
Retained Second Twin	3 (0.3%)	1 (0.5%)	0.363	0.547
Cord Prolapse	8 (0.7%)	2 (1.1%)	1.744	0.187
Abnormal Lie	2 (0.2%)	4 (2.2%)	1.969	0.161
Compound Presentation	2 (0.2%)	1 (0.5%)	0.048	0.826
Total	66	43		

Table. 4: Foetal Complications.

	Multiparous Number (%)	Grandmultiparous Number (%)	Chi-Square	P- Value
	N=182	N=34		
Foetal Distress	23 (2.0%)	4 (2.2%)	0.020	0.888
Foetal Macrosomia	51 (4.3%)	12 (6.6%)	0.733	0.392
Lowbirthweight	104 (8.9%)	16 (8.8%)	1.180	0.271
Congenital Anomaly	4 (0.3%)	2 (1.1%)	1.440	0.230
Total	182	34		

Table 5: Fetal outcome

	Multiparous N(%)	Grandmultiparous N(%)
Live births	1155 (94.7)	180 (91.4)
FSB	28 (2.3)	8 (4.1)
MSB	37 (3.0)	9 (4.6)

Table. 6: Mode of Delivery.

	Multiparous N(%)	Grandmultiparous N(%)	Chi-Square	P- Value
SVD	842 (71.7%)	114 (62.6%)	6.251	0.012
ABD	3 (0.3%)	2 (1.1%)	3.051	0.081
IVD	13 (1.1%)	4 (2.2%)	1.514	0.219
Emergency CS	233 (19.8%)	42 (23.1%)	1.017	0.313
Elective CS	78 (6.6%)	13 (7.1%)	0.063	0.802
Laparotomy	5 (0.4%)	7 (3.8%)	21.015	<0.001
Total	1174	182		

SVD = Spontaneous Vaginal Delivery

IVD= Instrumental vaginal delivery

ABD= Assisted Breech Delivery

CS= Caesarean Section

Table. 7: Causes of maternal death.

Cause of death	Multiparous N(%)	Grandmultiparous N(%)
PPH	5(38.5%)	1(16.7%)
Eclampsia	4(30.8%)	3(50%)
Obstructed labour	0	1(16.7%)
Diabetes mellitus	0	1(16.7%)
CCF	1(7.7%)	0
AKI	2(15.4%)	0
Sepsis	1(7.7%)	0
Total	13	6

PPH – Post-Partum Haemorrhage

CCF – Congestive Cardiac Failure

AKI – Acute Kidney Injury

DISCUSSION

The incidence of grand multiparity in this study was 5.3% which is much lower than the usually quoted range of 19.3% and 33.6% for developing countries.^[17,18] It is also lower than values reported from Kano (10.2%), and Maiduguri (18.8%), both in Northern Nigeria.^[5,12] This result may be attributable to increase awareness among women of reproductive age group about the inherent dangers associated with grand-multiparity. Perhaps, the characteristics of women attending our facility for Obstetric care as the only Teaching Hospital in Abuja may have been skewed to working class population that may prefer limited family size. The economic realities may also be another factor. The report from Kano may be arguably said to be from polygamy dominated environment where competition from rival partners in such settings may encourage higher deliveries while, the Maiduguri study was As far back as more than a decade and a half when there may be more ignorance about the hazards of grandmultiparity. The incidence of grandmultiparity in our center is however higher than 2.5% from Osogbo, south west, Nigeria and 1.92% in Port-Hacourt, south-south Nigeria.^[19, 20] Our reported incidence was the same with that of the Kingdom of Saudi Arabia.^[11]

Sixty-two percent (62.1%) of the grandmultipara were booked while 37.9% were unbooked and this is lower than 79.5% in Awka, south-east, Nigeria.^[9] This disparity may probably be due to higher literacy level in that part of Nigeria compared with the north.

More than half of the study group (56.0%) were less than 35 years (mean age of 33.0 ± 5.7 years). This is similar to 33.26 ± 1.8 years reported in Lagos.^[21] This may be due to early marriage, desire for a large family size, and poor child spacing. This appears contrary to the current trend among women to delay child birth in pursuit of western education such that by the time they deliver their 5th pregnancy, they may have been older than 35 years. Maternal age is said to be an independent risk factor for complications in grandmultiparity.^[18] Studies have shown that there appears to be an age-related increased risk of chronic hypertension, placenta previa, placental abruption, gestational diabetes mellitus, twinning and foetal macrosomia.^[17,21,22] This study

corroborated above findings as there was a relatively higher risk of both antepartum, intra-partum/postpartum complications. The incidence of multiple pregnancy was higher in the grand multiparous women (7.7%) than multiparous women (3.8%). This is similar to the findings in Kano, north-west and Imo, south-east, Nigeria, where more cases of multiple pregnancies were recorded among grand multiparous women.^[5,23] The incidence of placenta previa and diabetes mellitus were significantly higher in the grand multiparous group ($p = 0.012$, and $p = 0.001$ respectively). This was similar to the findings in Kano and Bahrain where the incidence of diabetes mellitus was demonstrated to be significantly higher in the grand multiparous group.^[5,24]

Primary postpartum haemorrhage, obstructed labour and uterine rupture were the most common Obstetric complications among the study population. Surprisingly however, Primary postpartum haemorrhage and uterine rupture were higher among the multiparous group (Control) than the grand-multiparous women in this study, even though the difference between the two groups was not statistically significant ($p = 0.115$ and $p = 0.156$ respectively). This is similar to reports from Benin, Lagos and Ibadan.^[6,21,25] Probably, the rising incidence of cesarean section among younger women right from initiation of parturition may have predisposed these multiparous women to these two complications. Grandmultiparous patients may have escaped the current global rising trend in cesarean section during their early reproductive years thereby reducing their risk of uterine rupture. The higher tendency of labour augmentation arising from dysfunctional uterine contraction that are more likely among women of lower parities may have predisposed these multiparous women to uterine atony with consequent primary postpartum haemorrhage. Perhaps, there was laxity in the active management of the third stage in some of such women.

Cephalic presentation was the commonest presentation at the time of delivery in the two study groups. However a relatively higher number of grand-multiparous women (2.7%) presented with shoulder presentation from a transverse lie compared to 0.4% of multiparous women. The lax uterine musculature and anterior abdominal wall muscles/skin may have been responsible for more

frequent abnormal lie observed among these grand-multiparous women. Abnormal presentations and lie have been long demonstrated as common complication of grand multiparity in literature.^[2,13] The pendulous abdomen together with a high angle of pelvic inclination resulting from associated lordosis of the lumbar spine favours Occipito-posterior, face and brow presentation.^[13] The proportion of the grand multiparous women (62.6%) who delivered by spontaneous vaginal delivery in this study was higher than was reported from the Lagos study by Ogedengbe where only 50% of the grand multiparous women had spontaneous vaginal delivery.^[21] This high number of spontaneous vaginal delivery is probably attributed to the fact that a sizeable number of the women booked for antenatal care, and had supervised labour and deliveries.

Emergency cesarean section rates among the grand multiparous women were found to be higher than in the multiparous women (23.1% Vs 32.2% respectively). These were lower than the 32.2% reported in Uyo and 30.37% in Lagos, but similar to findings in Imo.^[15,21,13] Poor utilization of antenatal services by the grand multiparous women may have been responsible for this outrageous rate of emergency cesarean section in this subpopulation. Perhaps, if more had booked for antenatal care, indications for elective intervention might have been detected during their routine visit and delivery planned. Laparotomy for ruptured uterus was performed in 3.8% of grand multiparous women, compared with 0.4% in multiparous women ($p = 0.001$). Grand multiparous women are particularly prone to obstructed labour and subsequent uterine rupture because of the increased risk of malpresentation, macrosomic babies and foeto-pelvic disproportion due to spondylolisthesis.^[13]

During the study period, 6 (3.3%) women died in the grandmultiparous group while 13 (1.1%) women died in the multiparous group (Table 7). Maternal mortality among the grand multipara was mainly due to eclampsia while primary postpartum haemorrhage was mainly the cause among the multiparous group. This shows that grandmultiparity is still a major risk factor for maternal mortality. The figures here might appear high but it is important to note that our center is a referral center where some cases are referred late.

Low birth weight was the commonest complication seen in grand multiparous women, (8.8%). However, it was similar to what was found in multiparous group (8.9%). This was similar to findings in Kano and Imo.^[5,23] Grand multiparous women had much lower newborn 1st and 5th minute APGAR scores in the study. This may be attributed to the higher number of pregnancy and labour complications in the grand multiparous group. Complications such as obstetric haemorrhage, low birthweight as well as higher incidence of emergency cesarean section tend to have a direct untoward effect on the wellbeing of unborn foetuses hence, lower APGAR

scores of the newborns. This is however at variance with the Bondagji study in Bahrain where both groups had comparable APGAR scores.^[24] The stillbirth rate was 94.4/1000 live births among the grandmultipara and 56/1000 live births among the multipara.

Studies from developed countries are increasingly reporting fewer complications during pregnancy and labour among grand multiparous women, and obstetrical complications among this group of women tend to be independently associated with progressive maternal age.^[1,10] This was however in contrast to this study where grand multiparity was still associated with high maternal and perinatal morbidity and mortality.

CONCLUSION

Grandmultiparity is associated with increased maternal and perinatal morbidity and mortality. There is a need to create more awareness about the hazards of grandmultiparity as well as female education, and acceptance and uptake of modern family planning methods in our community to reduce the morbidity and mortality associated with grand multiparity. Improvement in patients' awareness, antenatal care and Emergency Obstetric Care in contemporary practice may produce improved outcome of pregnancy in this high risk group.

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