A COMPARATIVE STUDY OF MULTIPAROUS AND GRAND MULTIPAROUS WOMEN IN A TERTIARY HOSPITAL IN NIGERIA

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ABSTRACT

Background: *Traditionally, grandmultiparity has been considered to be an obstetric risk to both the mother and the fetus. Cases of grandmultiparity are common in the developing countries, where compounding factors such as low socioeconomic levels, female illiteracy, social deprivation and lack of access to modern family planning services are common.*

Objectives: *This study is aimed at determining the prevalence and socio-demographic characteristics of grandmultiparous(GMP) women and multiparous(MP) women, the complications they may have during labour and delivery.*

Study Design: *A 5-year retrospective study from 1st September, 2007 to 31st August, 2012 in Aminu Kano Teaching Hospital, Kano. All the grandmultiparous and multiparous women were included. The unbooked patient and patients who booked but did not deliver in Aminu Kano Teaching Hospital were excluded from the study. Their records were collected from the labour ward and Patients' case files were retrieved, studied and recorded in a proforma. Data analysis was done using Epi info version 3.5 statistical software (CDC Atlanta,Georgia,USA) and proportions were compared using the Chi square test where applicable with level of significance considered at a P-value of <0.05.*

Results: *During the study period, a total of 19,456 parturient were delivered in Aminu Kano Teaching Hospital, out of which 3364 (17.3%) were grandmultiparous, 9038 (46.4%) were multiparous and 7054(36.3%) were primiparous. There were more labour and neonatal complications with GMP than MP with statistically significant difference P<0.05. Most of the maternal and neonatal deaths occurred among the GMP with statistically significant difference P < 0.05.*

Conclusion: *Grandmultiparity poses a great challenge in our obstetric practice, with its attendant high maternal and perinatal complications. Concerted efforts should be directed toward reducing high parity in the community through effective family planning initiatives, improved antenatal care attendance and provision of skilled birth attendants.*

Key words*: Grandmultiparity, multiparity, comparism, labour complications perinatal outcome, Kano-Nigeria*

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INTRODUCTION

Grandmultiparity posed a great challenge to the obstetricians due to its significant contribution to the maternal and perinatal morbidity and mortality[1-3]. The overall incidence of grandmultiparity is between 10 – 30%.[4] In Karachi Pakistan the incidence was 28.73%[5]. In Nigeria and West Africa as at 1984 the incidence was 17% to 21%[6]. In 1987 the WHO, UNDP and World Bank convened an International Safe Motherhood conference in Nairobi Kenya so as to draw attention to the appalling high maternal death rates in developing countries and to mobilize immediate and concerted measures at National and International levels to prevent this "tragedy.[2] Following this, safe motherhood initiative in various countries were initiated, so as to identify the high risk factors in pregnancies that can cause maternal deaths.[2] Grandmultiparity has been associated with an increased risk of antepartum and intrapartum as well as postpartum complications.[7]

Antepartum complications include:

hypertension, cardiac disease and diabetes mellitus.[8] Abortion is common amongst the grandmultiparous women and this is due to socio economic reason.[8]

Anaemia, malnutrition, malpresentation, antepartum hemorrhage and multiple pregnancies, uterine rupture and puerperal complications are also common.[8]

Karim Aziz in his study in Pakistan in 1989 found the incidence of anaemia amongst the grandmultiparous to be 64%, abortion rate was 16%, and abruptio placenta 14.4%.[5] In labour they may have cephalopelvic or fetopelvic disproportion, cord prolapse due to malpresentation, precipitate labour, ruptured uterus and postpartum haemorrhage.[8] Gynecological condition such as fibroid, ovarian tumors, uterovaginal prolapse and carcinoma of the cervix are seen to complicates these pregnancies more than those of lower parity. The fetus/neonate of the grandmultipara is at a higher risk of low birth weight preterm birth and congenital malformation[2].

In addition to the obstetric risk, grandmultiparity is an indicator of poverty, deprivation and social in equities that women face in the developing world like Nigeria. It is a reflection of poor female literacy and employment opportunities as well as inadequate performance of national family planning initiatives as well as maternal health services.[8]

It is hoped that this study will unveil the risks that grand multiparous woman are particularly prone to with subsequent pregnancies and deliveries.

MATERIALS AND METHODS

This was a retrospective study done over the period of 5 years 1st September, 2007 to 31st August, 2012 between. The antenatal and labour records of all grandmultiparous and multiparous patients within this period were analyzed.

The unbooked patient and patients who booked but did not deliver in Aminu Kano Teaching Hospital were excluded from the study. The information obtained included age, complications during labour and delivery, mode of delivery, maternal and fetal outcome. The data collected were subjected to computer analysis using Epi info version 3.5 statistical software (CDC Atlanta,Georgia,USA).

RESULTS

During the study period a total of 19,456 booked parturient were delivered in Aminu Kano Teaching Hospital, out of which 3364 (17.3%) were grandmultiparous, 9038 (46.4%) were multiparous, and 7054(36.3%) were primiparous.

Table 1 showed the age-group distribution amongst both groups; Approximately Eighty seven percent of the clients were between the age of 26 and 40 years. The modal age range amongst the grandmultiparous was 31-35 years (36.2%) and 21-25 years (41.7%) amongst the multiparous.

Complications in labour were shown in table II and this revealed that breech presentation is the commonest complication seen in grandmultiparae (23.2%), while amongst the multiparae pre-labour rupture of membrane (PROM) was the commonest complication 34.3%. Perineal laceration was seen in 14.9% of grandmultiparae and 16.6% in multiparae in grandmultiparae 93(7%) compared to 9(1%) in the multiparae group. There were more labour complications with GMP than MP with statistically significant difference $P<0.05$ (Table II). Most of the maternal and neonatal deaths occurred among the GMP with statistically significant difference $P < 0.05$(table IV and V). The overall maternal mortality ratio during the study period was 838/100,000

Table III shows spontaneous vaginal delivery to be the commonest mode of delivery amongst the group, 3102(79.6%) grandmultiparae, and 13149(92.7%) multiparae. Emergency, lower segment caesarean section was seen in 397(10.2%) grandmultiparae as compared to 290(2.1%) multiparae. Forceps/vacuum was common amongst the multiparae 510(3.6%).

Table IV showed that there were more still births and early neonatal deaths among the GMP than the MP with statistical significant difference (P= 0.04,0.01 respectively).

Table V showed that more deaths occurred among the GMP than the MP with statistically significant difference (P=0.01).Table VI showed the main cause of death amongst the grandmultiparae was found to be obstetric hemorrhage 64(36.2%). This was closely followed by ruptured uterus in 61(34.5%) cases. Both of them showed statistically significant difference (P=0.02), while pre-eclampsia/eclampsia accounted for the death of 19(50%) cases in the multiparae group and only 23% in the grandmultiparae.

DISCUSSION

The incidence of grandmultiparity which was found to be 17.3% in this study is similar to that reported by Diejomaoh et al, in Benin[9] but higher than 14.5% reported by Idrissa in Maiduguri,[10] 16.4% in Enugu, [11] and 11.5% reported by Eidelmon *et al.*,[12] in Jerusalem. These observed differences may be due to differences in acceptance of family planning by different sociocultural, religious groups in developed and developing countries. The modal age range amongst the grandmultiparae was 31 to 35 years, which accounted for 36.2% of the patient. Most of them 92.5% were 40 years and below. This was slightly at variance with the study done by Idrissa in Maiduguri where the modal age was 26 to 30 years accounts for 48.3% of the cases and most patients were 35 years and below (97.4%). This difference may be due to the early ages of marriage and hence teenage pregnancy and early child birth seen in the extreme north of the country as compared to the other part of the north.[10]

The commonest labour complications were pre labour rupture of membranes, breech presentation, postpartum haemorrhage,

TABLE 1: AGE DISTRIBUTION AMONG THE GRANDMULTIPARA (GMP) AND MULTIPARA (MP)

Age in years	Number of GMP	Percentage	Number of M.P	Percentage
<20	7	0.2	669	7.4
21 – 25	161	4.8	3769	41.7
26 – 30	811	24.1	2349	26.0
31 – 35	1218	36.2	1319	14.6
36 – 40	915	27.2	669	7.4
>40	252	7.5	263	2.9
Total	3364	100%	9038	100%

GMP – Grandmultiparity MP – Multiparity

prolonged obstructed labour, ruptured uterus amongst others with statistically significant difference (P<0.05)when compared with the multiparae. This agrees with other studies in were GMP is associated with similar complications in labour compared to the MP.[10,11,13,14] But at variance with studies from the developed countries where there was no statistically significant difference in preterm labour and postpartum haemorrhage between the GMP and MP.[15,16] This difference may be due to better antenatal and intrapartum care in the developed countries compared to the developing countries.[16]

Though 3,102(79.6%) of grandmultiparae and 13,149(92.7%) of multiparae had spontaneous vaginal delivery. Obstetric intervention was required in 795(20.4%) of grandmultiparae and 1035(7.3%) of multiparae in the form of caesarean section,

TABLE II: LABOUR COMPLICATIONS

Complication in labour	Number of GMP	Percentage	Number of M.P	Percentage	X^2 test
Prolonged/obstructed labor	130	9.7	87	9.6	0.05
Occipitoposterior	17	1.3	30	3.3	0.16
Postpartum hemorrhage	109	8.2	60	6.6	0.01
Breech presentation	230	17.1	121	13.4	0.01
Retained placenta	20	1.5	68	7.5	0.35
Cord prolapsed	23	1.7	40	4.4	0.09
Fetal distress	45	3.4	100	11.1	0.29
Cervical dystocia	15	1.1	10	1.1	0.01
Perineal laceration	200	14.9	150	16.6	0.02
Cervical laceration	46	3.4	110	12.2	0.43
Pre-labour rupture of membrane	250	18.7	120	13.3	0.01
Ruptured uterus	93	7.0	9	1	0.01
Total	1338	100%	905	100%	

TABLE III: MODE OF DELIVERY

Mode of delivery	Number of GMP	Percentage	Number of M.P	Percentage	
Spontaneous vaginal del.	3102	79.69	13149	92.7	
Assisted Breech Del.	261	6.7	71	0.5	
Forceps/vacuum Del.	63	1.6	510	3.6	
Emergency lower segment caesarean section	397	10.2	290	2.1	
Elective lower segment caesarean section	74	1.9	164	1.2	
Total	3897	100%	14184	100%	

forceps or vacuum delivery. Caesarean section rate was high 12.1% in the grandmultiparae.

This was similar to the finding by Nnatu *et al.,* in Lagos where 77% of grandmultiparae had spontaneous vaginal deliveries and 19% needed one form of obstetric intervention or the other.[17].

The grandmultiparae had 83.7% live babies, 14.7% stillbirth and 1.6% immediate neonatal deaths with statistically significant difference ($P<0.05$) with the low parity group. This is similar to other studies,[13,18,19] and may reflect deficiency in standard perinatal care services in the environment.

There was a high maternal mortality recorded 146(3.5%), 35 per thousand live birth, it was almost similar to that found by Ogedengbe in Lagos 44.4 per 1000 live birth[7]. Similar findings were seen in other parts of the developing world due to poor health facilities, poor antenatal and perinatal care. The overall maternal mortality in this study was 838/100,000 which is higher than the current national maternal mortality rate of 576/100,000 live births.[20] The commonest

TABLE IV: FETAL OUTCOME

Fetal outcome	Number of GMP	Percentage	Number of M.P	Percentage	X^2 test
Live birth	2816	83.7	8776	97.1	0.01
Fresh still birth	289	8.6	136	1.5	0.04
Macerated still birth	205	6.1	72	0.8	0.01
Immediate neonatal death	54	1.6	54	0.6	0.01
Total	3364	100%	9038	100%	

TABLE V: MATERNAL OUTCOME

Maternal outcome	Number of GMP	Percentage	Number of M.P	Percentage	X^2 test
Alive	3246	96.5	8993	99.5	0.01
Dead	118	3.5	45	0.5	0.01
Total	3364	100%	9038	100%	

cause of death amongst the grandmultiparae was hemorrhages 36.2% which could be due to uterine atony, bearing in mind that this category of parturient have higher uterine laxity among others.

Other causes of death were ruptured uterus 34.5%, eclampsia 23.2% and anesthetic complications 6.2%. There was however no statistically significant difference in the causes of death between the GMP and MP (P>0.05).

Maternal outcome of GMP

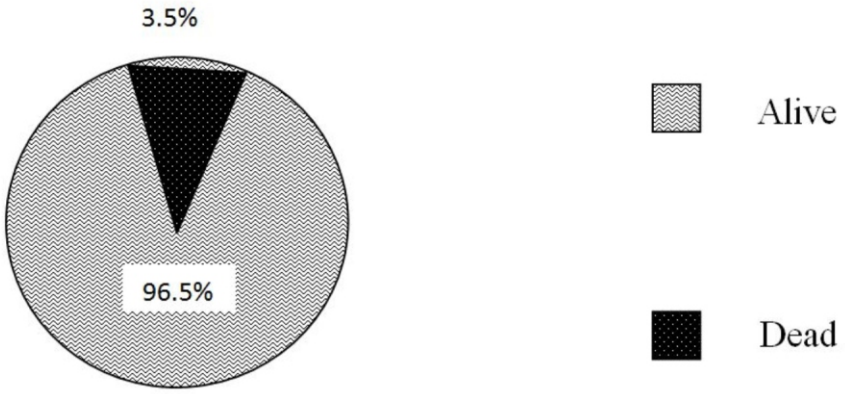

TABLE VI: CAUSES OF DEATH

Cause of death	Number of GMP	Percentage	Number of M.P	Percentage	X^2 test
Hemorrhages	43	36.2	8	18.4	0.02
PET/Eclampsia	27	23.2	22	50	0.79
Anaesthetic	7	6.2	4	7.9	0.50
Ruptured uterus	41	34.5	11	23.7	0.20
Total	118	100%	45	100%	

CONCLUSION

This study has shown that multiparous women are twice as common as grand multiparous women, however grandmultiparity is associated with higher intrapartum and postpartum complication such as ruptured uterus and postpartum haemorrhage, higher instrumental deliveries and increased cesarean section rate compared to the multiparous women. It is also associated with increased perinatal deaths and increased maternal morbidity and mortality.

However the conflicting findings in the developed countries may suggest that with satisfactory health care conditions as obtained in developed countries, the pregnancy risk in the grandmultiparous women could be reduced.

RECOMMENDATION

The need for women to utilize modern contraceptive method to limit family size because of the complications associated with grand multiparity is recommended.

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