

Nigerian Journal of Clinical Practice
Sept. 2010 Vol. 13(3):301-305

GRANDMULTIPARITY: EXPERIENCE AT AWKA, NIGERIA

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ABSTRACT

Background/Aim: The grandmultiparae have basically been regarded as high risk obstetric patients. This study was undertaken to estimate the prevalence in this area as well as evaluate the problems, associated factors and ways of reducing the burden.

Methodology: This was a retrospective study of the problems of grandmultiparity (five or more previous viable babies) at Amaku General Hospital, Awka over a three year period, January 2006 to December 2008. One hundred and thirty five (135) grandmultiparous women (study group) were matched with a similar number of women of lower parity (Para 2 and 3), who attended and delivered in the hospital during the same period. The problems seen in both groups during pregnancy and labour, mode of delivery, birth weight, perinatal and maternal mortalities were compared. The socio-demographic characteristics were also compared.

Results: The incidence of grandmultiparae was 7.53%. Twenty nine (21.5%) of the grandmultiparae were unbooked compared to 6(4.4%) of the control group. Ninety four (69.7%) of the study group belonged to the low social class IV and V compared to 27(20%) of the control. Anaemia in pregnancy was commoner in study than in the control group (49(36.3%) versus 12 (8.9%). There was a high caesarean section rate in the study group compared to the control (31(23.0%) versus 6(4.4%). The maternal mortality rate in the study group was 22.2/1000. There was no maternal death in the control.

Conclusion: Improving the socio-economic standard of our women and increased awareness in the importance of family planning will reduce the incidence and complications of grandmultiparity.

Key Words: grandmultiparity, anaemia, caesarean section, family planning. (Accepted 10 August 2009)

INTRODUCTION

The grandmultiparae have basically been regarded as high risk obstetric patients because of their ease of developing both medical and obstetric complications of frightening proportions with fatal consequences. Whereas the incidence and pregnancy outcome in these group of patients in developed countries have been largely controlled through universal availability and use of effective contraception, modern healthcare delivery, and improved literacy rates, various disconcerting figures have been quoted in developing countries where a combination of sociocultural factors, inadequate health facilities leading to high infant mortality, poor access and non utilization of family planning measures have all combined to maintain very high rates².

An incidence of only 1.9% was recorded in London with women of Asian extraction contributing a significant proportion³. In Nigeria, the incidence from various studies ranged between 7.34% and 17.3%^{4,5,6,7}. A downward trend had been noted and this has been attributed to the present economic hardship in the country⁵.

This study was undertaken to estimate the prevalence

in this area as well as evaluate the problems, associated factors and ways of reducing the burden.

MATERIALS AND METHOD

A retrospective study was carried out on the problems of grandmultiparity (five or more deliveries at or past 28 weeks of gestation⁷) as they presented at Amaku General Hospital Awka, Southeast Nigeria over a three year period January 2006 to December 2008.

The hospital is a secondary health care facility and it receives referral from private hospitals and a litany of peripherally located primary health centres. The town is largely inhabited by ethnic Igbos with trading and metal works as ways of life. There are pockets of other tribes.

There were a total of one hundred and thirty five cases of grandmultiparae during the study period. The outcome in these women were compared with that of a similar number (one hundred and thirty five) of randomly selected women of lesser parity (para 2 and 3) aged between 20 to 30 years. The later which served as control were chosen since studies have shown that the best obstetric outcome of pregnancies occur at that age group while the worst are found at the extremes of reproductive age⁸. Primigravidae were excluded.

They were analyzed with respect to maternal age,

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parity and socioeconomic class which was based on a scoring system of social classification combining husbands' occupation and maternal level of education⁹. The husband's occupation was scored thus; professional 1, middle level 2, unskilled 3, and woman's education thus; university 0, secondary/post primary below university 1 and primary/nil 2. Each woman's social class (I-V) is obtained by adding scores from her husband's occupation and her educational level. This system allocates each woman to a social class I to V, social class V being at the bottom of the social classification. All the women were married. The problems seen during pregnancy and labour, mode of delivery, birth-weight of the babies, perinatal and maternal deaths were also obtained and analysed using tables, proportions and percentages. Chi-square was used to compare some of the variables.

RESULTS

During the period under review, there were 1793 deliveries with a total grandmultiparae population of 135 giving an incidence of 7.53%. Twenty nine (21.5%) of these were unbooked compared to only 6(4.4%) amongst the control. Twelve (41.4%) of the unbooked grandmultiparae were brought by their relations from the spiritual homes when they failed to deliver. All the unbooked women in the control were referred from private hospital/primary health centres.

The mean ages of the study group and control were 32.0±5.4 years (mean ± SD years) and 27.6±2.4 years (mean ± SD years) respectively. Parity distribution of the grandmultiparae indicates that 59.3% (80) were of parity five and six, 50 (37.0%) were above the parity of seven and parity ten 5(3.7%) was the highest.

The socio-demographic profiles of the patients are shown in tables 1 and 2. Ninety six (71.1%) of the study group were under 34 years of age. Ninety four (69.7%) of the study group belonged to social class IV and V compared to 27 (20%) in the control. This was statistically significant (P<0.05).

One hundred and six (78.5%) of the study groups booked at a mean gestational age 23.4±7.4 weeks whereas in the control 125 (95.6%) booked earlier, at a mean gestational age of 12.4±3.6 weeks.

The complications in pregnancy, labour and delivery are shown in table 3. Anaemia (haemoglobin of less than 10.0 g/dl) in pregnancy occurred in 49 (36.3%) of the study group and in 12 (8.9%) of the control. The majority of the study group 97 (71.9%) and control 124 (91.9%) had spontaneous vertex delivery. However, a greater number 31 (23%) in the study group had caesarean section (c/s) as opposed to 6(4.4%) in the control. Of the 31 patients that had caesarean section in the study group, 13(41.9%) were due to previous abdominal deliveries, 10 (32.3%) due to cephalopelvic disproportion (CPD), 5 (16.1%) due to malpresentation, 2(6.5%) due to antepartum haemorrhage and 1(3.2%) due to cord prolapse. Of the 6 that had caesarean section in the control 3 each were

due to malpresentation and antepartum haemorrhage. The mean birth weight of the babies in the study 3.6±2.3kg was significantly higher than that of the control 3.2±1.6kg and may have contributed to the cephalopelvic disproportion (P<0.05).

Similarly primary postpartum haemorrhage (PPH) (blood loss in excess of 500mls within 24 hours of delivery) occurred in 18 (13.3%) of the study group and in only 3(2.2%) of the control. Uterine atony was the commonest cause. Uterine massage and/or exploration with oxytocin therapy were sufficient to control the bleeding in most cases except in 1(1.5%) of the unbooked patient in the study group who despite receiving 2 pints of blood died from overwhelming sepsis. In the control group, the primary postpartum haemorrhage was due to cervical laceration.

There were 7 stillbirths and 5 neonatal deaths in the study group and 1 neonatal death in the control. Of the 7 stillbirths, 2 (28.6%) were due to congenital abnormalities, and five (71.4%) were from unbooked grandmultiparous patients who presented with varying degrees of anaemia and sepsis. The neonatal deaths in both groups were due to prematurity.

The perinatal mortality rate was 88.9/1000 for the study group and 7.4/1000 for the control. There were 3 maternal deaths (2 from ruptured uterus and one due to PPH and sepsis) among the grandmultiparae and none in the control. The maternal mortality rate was 22.2/1000.

Table 1: Age of Distribution of the Patients.

Age in Years	Study Group	Control
	N (%)	N (%)
20 – 24	11 (8.1)	61 (45.2)
25 – 29	29 (21.5)	59 (43.7)
30 – 34	56 (41.5)	5 (11.1)
35 – 39	24 (17.8)	-
40 – 44	15 (11.1)	-
	135 (100)	135 (100)

96 (71.1%) of the study group were under 34 years of age.

Table2: Social Class of the Patients.

	Study Group	Control
	N (%)	N (%)
I	8 (5.9)	21 (15.6)
II	10 (7.4)	42 (31.1)
III	23 (17.0)	45 (33.3)
IV	37 (27.4)	17 (12.6)
V	57 (42.3)	10 (7.4)
	135 (100)	135 (100)

94 (69.7%) of the study group belonged to social class iv and v compared to 27 (20%) in the control.

remains a crucial and pivotal single factor influencing maternal mortality rate¹⁵.

Hypertensive diseases have been associated with grandmultiparae¹⁶. This was not evident in this review and may be attributed to the younger ages of the women in the study group.

Similarly antepartum haemorrhage in the study group (4.5%) though significantly higher than the control (2.9%) ($P < 0.05$) was lower than the 6.2% and 5.8% reported by Diejomaoh⁶ and Al-Sibai¹⁰ respectively. Abruption placentae often ranks highest amongst the causes of antepartum haemorrhage in the grandmultipare. This is probably related to their increased predisposition to hypertensive diseases. However hypertensive diseases did not feature prominently in this review due to their younger ages.

The difference in the mode of delivery was reflected in the higher caesarean section (c/s) rate in the grandmultiparae. The higher number of grandmultiparous women who had previous abdominal delivery 17 (12.6%), malpresentation 10 (7.4%), diabetes mellitus 5 (3.7%), placenta praevia 4 (3.0%), cord prolapse 2 (1.5%) and fetal macrosomia (mean birth weight 3.6 ± 2.3 kg) undoubtedly contributed to the higher rate of caesarean section (grandmultip 23.6%, control 4.4%). Elective caesarean section for previous abdominal deliveries contributes greatly to high rate of caesarean section among grandmultiparae¹⁶. It is likely that the malpresentations are favoured by the pendulous abdomen, lordosis of the lumbar spine and the greater frequency of placenta praevia and multiple pregnancies. Cord prolapse was commoner in grandmultiparae due to the increased incidence of malpresentations and multiple pregnancies.

The operative delivery rate was also higher in the unbooked patients. This agrees with other reports^{16,17}. The commonest indication for caesarean section among the unbooked grandmultiparae was cephalopelvic disproportion (CPD). The occurrence of cephalopelvic disproportion in grandmultiparae has been attributed to the increased risks of macrosomic babies and pelvic contraction secondary to the high angle of inclination caused by lordosis of the spine as well as the forward displacement of the sacrum upon the sacro-iliac joint thus compromising the true conjugate of the pelvis¹⁸.

Primary Postpartum haemorrhage (PPH) was another danger faced by grandmultiparous patients in this review (grandmultiparae 13.3%: control 2.2%). This has been attributed to poor uterine contractility justifying liberal use of intravenously administered oxytocic following delivery of the anterior shoulder. However, majority of the patients who had primary postpartum haemorrhage were booked suggesting inappropriate management of the third stage. Additionally, the review of the quality of oxytocic

Agents used in some of our hospitals to ensure standards has been suggested¹⁹.

There were seven stillbirths in the grandmultiparae, five (58.3%) of which occurred in the unbooked mothers who presented with varying degrees of anaemia and sepsis. Anaemia is directly or indirectly associated with maternal and perinatal deaths. In a study on anaemia in pregnancy in Ibadan, Nigeria²⁰, a perinatal mortality rate of 33/1000 births was reported with most of the stillbirths occurring in moderately anaemic patients. The neonatal deaths were due to prematurity. The high degree of prematurity among the grandmultiparae could be attributed to multiple births. Low socio-economic class where majority of the grandmultiparae in this review belong may be contributory to the high incidence of prematurity. The perinatal mortality of 88.9 per 1000 births observed among the grandmultiparae in this review is astronomically high when compared with 7.4/1000 in the study group and 4.4 per 1000 reported by Eidelman²¹. It was however comparable to 81.3 per 1000 reported in Lagos, Nigeria⁴. This calls for an improvement in the quality of neonatal services.

The three maternal deaths occurred among the unbooked mothers in the study group. This is in agreement with other reports^{16,17}. The unbooked mothers accounted for 21.5% of the grandmultiparae but were responsible for 100% of the maternal deaths. They are about 20–30 times more likely to die as compared to the booked patients¹⁷. Uterine rupture was the cause of death in two of the patients. Donald¹⁸ noted that uterine rupture constitutes one of the gravest risks of high parity. Excessive uterine action may occur spontaneously in grandmultiparae in the presence of obstruction but is more commonly due to injudicious use of oxytocics⁷ when there are mechanical problems. One of the grandmultiparous patients had caesarean hysterectomy, owing to the extensive nature of the uterine rupture which precluded any time consuming repair. This was necessary to save her life. The use of partogram in the peripheral hospitals and health centres will help detect early cases of cephalopelvic disproportion /obstructed labour with prompt intervention including early referral to prevent uterine rupture.

This review has shown that though there is a declining incidence of grandmultiparity, the risks inherent in this group of patients still exist. Improving the socio-economic standard of our women, restructuring of the primary health centres and increased awareness in the importance of family planning services will reduce the incidence of grandmultiparity and its complications. Women should be enlightened through health education on the need to utilize orthodox maternity services while ensuring that those attitudes of health workers which act as disincentive to their utilization were checked.

Table 3: **Complications in Pregnancy, Labour and Delivery.**

Pregnancy	Study Group	Control
	N (%)	N (%)
Anaemia	49 (36.3)	12 (8.9)
Previous Caesarean Section	17 (12.6)	3 (2.2)
Multiple Pregnancy	11 (8.1)	9 (6.7)
Malpresentation (transverse lie/unstable lie)	10 (7.4)	2 (1.5)
Breech	6 (4.4)	3 (2.2)
Pre eclampsia/hypertension	5 (3.7)	2 (1.5)
Diabetes Mellitus	5 (3.7)	3 (2.2)
Placenta Praevia	4 (3.0)	3 (2.2)
Abruptio Placentae	2 (1.5)	1 (0.6)
Labour	Study Group	Control
	N (%)	N (%)
Postpartum Haemorrhage	18 (13.3)	3 (2.2)
Obstructed labour	10 (7.4)	3 (2.2)
Uterine Rupture	2 (1.5)	0 (0.0)
Cord Prolapse	2 (1.5)	0 (0.0)
Mode of Delivery	Study Group	Control
	N (%)	N (%)
Spontaneous Vertex delivery	97 (71.9)	124 (91.9)
Caesarean Section	31 (23.0)	6 (4.4)
Vacuum Extraction	2 (1.5)	2 (1.5)
Breech Delivery	4 (3.0)	3 (2.2)
Caesarean Hysterectomy	1 (0.6)	0 (0.0)
	135 (100)	135 (100)
Mean birth weight	3.6±2.3kg	3.2±1.6kg
Stillbirth	7 (5.2)	Nil
Neonatal death	5 (3.7)	1 (0.7)
Perinatal Mortality	88.9/1000	7.4/1000
Maternal Mortality	22.2/1000	Nil

DISCUSSION

The incidence of 7.53% for grandmultiparae obtained in this study is similar to 7.34% from Benin⁴. It is however lower than 9.4%, 17.3%, 11.0% and 18.5% obtained from Lagos⁴, Benin City⁶, Enugu⁷ and Saudi Arabia¹⁰ respectively. This declining trend has been attributed to the unremitting economic recession⁵. However, this review as well as other hospital based surveys may not be truly reflective of the magnitude of this problem since only thirty percent of Nigerian women deliver in health institutions¹¹. Recently, it has been discovered that most of our women now attend antenatal care and deliver in ever growing number of spiritual churches⁵ and reasons for this aberration have ranged from protection against satanic attacks, lack of funds, harsh attitude of health workers, convenience to faith in God and previous deliveries in church¹². The bulk of the unbooked grandmultiparae in this study who came in moribund states were from these spiritual homes. Their prophecies and visions are used to instill fear into them and they are strongly discouraged from utilizing orthodox health facilities¹³. Most of these women, especially those of higher

parity having gone through childbearing processes several times are confident of achieving the fit anywhere and may be victims of these faith driven spiritual organizations even in areas like ours where nominal fees were paid for deliveries. This may explain the apparent decline.

Anaemia in pregnancy was commoner in the grandmultiparae 49(36.3%) than in the control 12(8.9%). This may be attributed to the low socioeconomic class to which a majority belonged. Ninety four (69.7%) of the grandmultiparae belonged to social classes IV and V as opposed to 27 (22.0%) in the control. This has adverse implications on adequate nutrition, attendance and adherence to the tenets of modern antenatal care. Most of the grandmultiparae either booked late (mean gestational age at booking 23.4±7.4 weeks) or were unbooked 29 (21.5%) which meant that the structured teachings of modern antenatal care were not imbibed. The nature of antenatal care provided was hospital based and very basic and emphasis was centered on prevention of anaemia in pregnancy and the avoidance of obstructed labour¹⁴. Antenatal care

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