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Original Research Article

Grand multiparity and obstetric complications at the federal medical centre Umuahia, Abia State, Nigeria: a case control study

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ABSTRACT

Background: Maternal mortality associated with multiparity increases steadily and speedily from the fifth pregnancy till the tenth or more with a mortality rate five times as high as in all women bearing children.
Methods: It was a five-year case controlled retrospective study of grand multiparous and multiparous women who presented at the hospital between January 1st, 2010 and 31st December, 2014. The population of the study consisted of 136 booked grand multiparous and 136 booked multiparous women who received antenatal, intranatal and postnatal care at the hospital during the period of the study. The entire population was used. The instruments for data collection were the obstetrics records and registers and the individual patient's case notes that were obtained from the Medical Records Department and from labour ward of the Federal Medical Centre (F.M.C) Umuahia. Data were collected using researcher's developed proforma and were analysed descriptively using SPSS/IBM version 20 and presented in frequencies, percentages, means and standard deviation. A chi-square test was used for comparison of data which was taken at $p \leq 0.05$.
Results: The major findings showed that anaemia, chronic hypertension, antepartum haemorrhages, postdate, macrosomia, postpartum haemorrhage etc. were higher in the grand-multiparas compared to the multiparas. Multiparas had higher incidence of pre-eclampsia, caesarean section, low birth weight etc. than the grand-multiparas.
Conclusions: It is recommended that there is need to encourage female child education and equip obstetric facilities adequately to reduce the complications resulting from grand-multiparity.

Keywords: Grandmultiparity, Multiparous, Obstetrics complications

INTRODUCTION

Pregnancy among grand multiparous women is generally viewed as high-risk, with elevated parity linked to serious health and social outcomes affecting the mother, foetus, family, and the wider community.[1] Maternal deaths related to multiparity increase rapidly from the fifth pregnancy onward, reaching up to five times more than the rate recorded among women with fewer births.[2] Several researchers across the globe have examined how high parity influences antenatal, intranatal, and postnatal outcomes.[3]

The expression "grand multipara" was first introduced by Solomon in 1934, who described these women as "dangerous multiparas".[4] Grand multiparity, typically defined as having five or more births including the latest delivery, is recognized as an independent risk factor for numerous obstetric complications particularly in regions marked by poverty and inadequate healthcare.[5] A grand

multipara is a woman who has experienced five or more deliveries of infants reaching at least 24 weeks of gestation, and such women are often considered at elevated risk in subsequent pregnancies.[6]

Pregnancies in grand multiparous women evoke apprehension, especially among obstetricians in resource-limited settings.[7] High parity adversely affects both mother and child, and the problem is exacerbated in developing countries by low socioeconomic status, limited female education, and poor family planning uptake.[8] Short birth intervals and high parity are also contributing factors to poor maternal and perinatal outcomes which may lead to complications such as anaemia, hypertension, abnormal foetal presentations, dysfunctional labour, placental abruption, placenta praevia, foetal macrosomia, uterine rupture and postpartum haemorrhage (PPH) due to uterine atony.[9] Grand multiparity is also associated with previous pregnancy losses, such as intrauterine foetal death, preterm birth and low birth weight.[10] The shortage of skilled healthcare providers, limited access to modern medical facilities, especially in rural areas further aggravates obstetric risks among grand multiparas. Since these women are often above 35 years old, they are more susceptible to metabolic conditions such as diabetes mellitus and obesity, which heighten the risks associated with childbirth. However, studies have shown that with adequate prenatal and delivery care, grand multiparous women can achieve favourable outcomes.[11]

In industrialized nations, the incidence of grand multiparity is relatively low approximately 3-4% of all births with an average fertility rate of 1.9%. Here, high parity is not generally linked to pregnancy complications due to access to family planning services, comprehensive antenatal care, skilled medical personnel, and advanced obstetric facilities.[12] In contrast, developing nations report significantly higher rates. For example, grand multiparity accounts for 26.5% of births in Karachi (Pakistan), 10.2% in the United Arab Emirates and Riyadh.[13] 26.5% in Sudan, and between 5.1% and 18.1% in Nigeria.[14,15]

In Nigeria, early marriage and teenage pregnancies contribute significantly to high parity, with a birth rate of 39.1 per 1,000 recorded in 2015 (Nigeria Birth Rate Demographics, 2017). According to the World Bank (2013), Nigeria's fertility rate stood at 6.8 in 1980, 6.0 in 2001, and 5.6 in 2011. The Nigerian Demographic and Health Survey (NDHS, 2014) and CIA World Factbook (2014) both reported a fertility rate of 5.25, suggesting that the average Nigerian woman gives birth to at least five children, with a family planning usage rate of only 14.1% in 2011.

Despite governmental policies promoting smaller families, high parity remains widespread in developing regions, with rates ranging from 10–30%, especially in predominantly Muslim communities where large families are the norm and contraceptive use is limited.[16]

The concern in the past has been mainly that grand multiparas were at higher risks of PPH and some other complications because the uterus might lose its elasticity and therefore might not contract well after birth.[17] However, many research into grand multiparas come from the developing countries where women may have to walk for many hours in labour, to reach a health facility, face higher risks than women in the developed countries like UK, USA etc. who are attended by qualified midwives and have access to drugs to treat PPH and can transfer to a hospital by ambulance if there is any concern. In view of the risks faced by grand multiparous women as shown by studies, this study was undertaken to determine the obstetric complications experienced by grand multiparous women during antenatal, intranatal and postnatal periods in comparison with those of multiparas at the Federal Medical Centre Umuahia Abia State Nigeria.

METHODS

This was a case control correlation study where the grand multiparous and the multiparous women were comparatively studied retrospectively.

Area of the study

The area of study was Federal Medical Centre (FMC), Umuahia, Abia State. The hospital is strategically located at the centre of Umuahia, the state capital of Abia State. It is the most well-equipped health facility in the state. It has a bed capacity of 300. There are 10 wards, 5 special units, 3 theatres and some other departments like the radiography, laboratory, pharmacy, OPD etc and some units like Neonatal Unit, accident and emergency, Isolation etc. F.M.C. Umuahia has skilled obstetricians and midwives who man the well-equipped obstetric unit where most of the deliveries take place. Booked cases are admitted into Obioma Ward and un-booked cases into Nkasiobi Ward. The Obstetric units are usually very busy and complicated and life-threatening obstetric conditions are regularly referred to the units.

Study population

The population of study were all the booked grand multiparous and booked multiparous women (comparison) who received antenatal, intranatal and postnatal care in FMC Umuahia within the period of study: 1st January 2010 to 31st December, 2014. The hospital identification numbers of both the grand-multiparous women and their corresponding comparison group of multiparous women were obtained from the labour ward register, and their case files were collected from the hospital's Medical Records Department. Women with parity ranging from 2 to 4 whose names immediately followed those of the grand-multiparas in the delivery register were selected as the comparison group. The total study population comprised 136 booked grand-multiparous women and an equal number (136) of booked multiparous women.

Sample size determination

The total population of the grand multiparas was one hundred and thirty-six (136). Due to the small size, the entire population of grand multiparas were used. Using information from the labour ward registers and mothers' case files, a total of 136 grand multiparous women (para 5-9) were selected as the study group, while 136 multiparous women (para 2-4) served as age-matched controls. Both groups consisted of booked women who delivered in the labour ward of the FMC, Umuahia, during the same study period. For each grand-multiparous case, a control was chosen by identifying the first woman of similar age who delivered within the same timeframe and had previously given birth two to four times. This selection process continued until the required sample size was reached, ensuring that the potential influence of maternal age on obstetric complications was minimized. The research was conducted over a three-month period. Excluded from the study were primigravidae, primiparae, un-booked women, and those with pre-existing medical conditions such as chronic hypertension or diabetes mellitus.

Instrument for data collection

Data for the study were obtained from maternal case records housed in the Medical Records Department and the labour ward registers of the hospital. A structured proforma was designed to facilitate the extraction of relevant information from these obstetric records and registers. The items on the proforma were formulated to specifically address the objectives of the study. The proforma was divided into three parts. Part one dealt with the demographic data of the respondents. Part two sought to determine the obstetrics histories of the grand multiparas and multiparas. Part three were based on obstetric complications of the respondents subdivided into: antenatal complications, intranatal complications and postnatal complications.

Validity of the instrument

The validity of the proforma was ensured through both face and content validation, conducted by two professionals specializing in Maternal and Child Health Nursing. These experts critically reviewed the instrument and provided insightful recommendations and corrections that helped the instrument to meet the face and content validity standards. The analyst also scrutinized the items for relevance of the contents.

Reliability of the instrument

The medical and obstetric records obtained from registers and the individual patients case notes were accurate and reliable sources of information devoid of bias. The institution has a well-organized record system with well trained and experienced staff who man the unit. The same data would always be derived because alterations and mutilations of records are criminal and not acceptable by the management, thereby rendering it reliable.

Ethical consideration

Ethical approval was obtained from the Research and Ethical Committee of Federal Medical Centre Umuahia. Permission was also obtained from the Chief Medical Director and the Director of Nursing Services before embarking on the research.

RESULTS

The mean age of the grand-multiparous women was 32.88±6.16 years, while that of the multiparous women was 32.22±5.54 years. The most frequent age group for both categories was 31-35 years, comprising 73 (53.7%) of the grand-multiparas and 46 (33.8%) of the multiparas. There were more rural dwellers among the grand-multiparas 95 (69.9%) and likewise among the multiparas 82 (60.3%). In marital status, almost all the grand-multiparas 126 (92.6%) and multiparas 123 (90.4%) were married, and likewise in religion: grand multiparas 106 (77.9%) and multiparas 107 (78.7%) were Christians. In educational qualification, those with secondary education were predominant for both grand-multiparas 68 (50.0%) and multiparas 69 (50.7%) while in occupation, the civil servants were predominant: grand-multiparas 92 (67.6%) and multiparas 64 (47.1%). In spouse/next-of-kin's occupation, those in business were more both for grand-multiparas 39 (28.7%) and multiparas 51 (37.5%) (Table 1).

Table 2 shows the number of deliveries during the period of study. There was increase in the number of deliveries from year 2010 to 2013 for both overall number of delivery and number of multiparas delivery. The overall total delivery was 7,377; the grand-multiparas total delivery was 136 while the multiparas was 4,568. Comparison revealed that there were significantly more multiparas deliveries than grand-multiparas deliveries during the study period, $p<0.001$.

Apart from anaemia ($p=0.018$), there was no significant proportional difference between grand-multiparas and multiparas with regard to other observed antenatal complications: chronic hypertension ($p=0.626$), Pregnancy Induced Hypertension (P.I.H) ($p=0.567$), multiple pregnancy ($p=0.802$), placenta praevia ($p=0.669$), abruption placentae ($p=0.606$), malpresentation ($p=1.000$), pre-eclampsia ($p=0.051$), eclampsia ($p=1.000$), premature rupture of membrane ($p=0.238$), post-date ($p=0.110$), oligohydramnios ($p=0.152$), polyhydramnios ($p=0.080$) and diabetes mellitus ($p=0.238$). This implies that apart from anaemia, cases of other complications were the same for both grand-multiparas and multiparas women. The odds of grand multiparas being anaemic were 1.8 times the odds of multiparas with 95% C.I of 1.11, 2.99 (Table 3).

Table 1: Socio demographic variables of the mothers (n=272).

Variables	Grand multiparas	Multiparas
	Frequency (%) (n=136)	Frequency (%) (n=136)
Age group in years		
< 20	0 (0.0)	2 (1.5)
20-25	1 (0.7)	18 (13.2)
26-30	25 (18.4)	45 (33.1)
31-35	73 (53.7)	46 (33.8)
36-40	32 (23.5)	20 (14.7)
≥ 40	5 (3.7)	5 (3.7)
Mean (SD)	32.88 (6.16)	32.22 (5.54)
Address		
Urban dwelling	41 (30.1)	54 (39.7)
Rural dwelling	95 (69.9)	82 (60.3)
Marital status		
Married	126 (92.6)	123 (90.4)
Divorced/separated	5 (3.7)	2 (1.5)
Single	1 (0.7)	7 (5.1)
Widowed	4 (2.9)	4 (2.9)
Religion		
Christianity	106 (77.9)	107 (78.7)
Islam	23 (16.9)	26 (19.1)
Traditional	2 (1.5)	0 (0.0)
Others	5 (3.7)	3 (2.2)
Educational qualification		
FLSC	16 (11.8)	8 (5.9)
Secondary	68 (50.0)	69 (50.7)
Tertiary	47 (34.6)	55 (40.4)
No formal education	5 (3.7)	4 (2.9)
Occupation		
Civil servant	92 (67.6)	64 (47.1)
Trader	23 (16.9)	25 (18.4)
Business	13 (9.6)	24 (17.6)
Farmer	2 (1.5)	5 (3.7)
House wife	6 (4.4)	18 (13.2)
Spouse/Next-of-kin's occupation		
Civil servant	30 (22.1)	19 (14.0)
Artisan	25 (18.4)	21 (15.4)
Business	39 (28.7)	51 (37.5)
Trader	27 (19.9)	36 (26.5)
Farmer	7 (5.1)	4 (2.9)
Unemployed	8 (5.9)	5 (3.7)

The average length of labour time was 5 hours for grand-multiparas and 8 hours for multiparas. Obstructed labour (p=0.197) and cord prolapse (p=0.003), were significantly more among grand-multiparas while multiparas had more prolonged labour (p<0.001) than the grand multiparas with regard to other observed labour complications: uterine rupture (p=1.000), SVD (p=0.080), breech (p=0.583), CS (p=0.099), vacuum extraction (p=0.184) and hysterectomy (p=1.000). This implies that apart from obstructed labour and cord prolapse, cases of other labour complications were the same for both grand-multiparas and multiparas. The odds of multiparas having a prolonged labour were 5.1 times the odds of grand-multiparas with 95% C.I of 2.03-12.8. For cord prolapse, no case was observed in multiparas 0(0.0%) compared to grand multiparas 9 (6.6%). The multiparas were 2.1 times more likely not to have the complication than grand multiparas with 95% C.I of 1.83-2.3 (Table 4).

Table 2: Number of deliveries during the period of study.

Year	Overall no. of delivery	No of grand-multiparas women delivery, Frequency (%)	No. of multiparas women delivery, Frequency (%)	χ^2	df	P value
2010	1377	25 (1.8)	840 (61.0)	4175.7	1	<0.001
2011	1441	28 (1.9)	914 (63.4)			
2012	1522	29 (1.9)	933 (61.3)			
2013	1632	29 (1.8)	975 (59.7)			
2014	1405	25 (1.8)	906 (64.5)			
Total	7377	136 (1.84)	4568 (61.9)			

Source: Labour Ward Delivery register, FMC Umuahia (2015)

Table 3: Comparison of complications of pregnancy in grand multiparas and multiparas.

Complications of pregnancy		Grand multiparas Frequency (%) n = 136	Multiparas Frequency (%) n = 136	χ^2	Df	P value
Anaemia	Yes	61 (44.9)	42 (30.9)	5.641	1	0.018
	No	75 (55.1)	94 (69.1)			
Chronic hypertension	Yes	10 (7.4)	8 (5.9)	0.238	1	0.626
	No	126 (92.6)	128 (94.1)			
P.I.H	Yes	14 (10.3)	17 (12.5)	0.328	1	0.567
	No	122 (89.7)	119 (87.5)			
Multiple pregnancy	Yes	8 (47.1)	9 (52.9)	0.063	1	0.802
	No	128 (50.2)	127 (49.8)			
Placenta praevia	Yes	13 (9.6)	11 (8.1)	0.183	1	0.669
	No	123 (90.4)	125 (91.9)			
Abruption placentae	Yes	9 (6.6)	7 (5.1)	0.266	1	0.606
	No	127 (93.4)	129 (94.9)			
Malpresentation	Yes	4 (2.9)	5 (3.7)	-	-	1.000*
	No	132 (97.1)	131 (96.3)			
Pre-eclampsia	Yes	5 (3.7)	13 (9.6)	3.808	1	0.051
	No	131 (96.3)	123 (90.4)			
Eclampsia	Yes	0 (0.0)	1 (0.7)	-	-	1.000*
	No	136 (100.0)	135 (99.3)			
Premature rupture of membrane	Yes	8 (5.9)	4 (2.9)	1.395	1	0.238
	No	128 (94.1)	132 (97.1)			
Post date	Yes	18 (13.2)	10 (7.4)	2.548	1	0.110
	No	118 (86.8)	126 (92.6)			
Oligohydramnios	Yes	14 (10.3)	22 (16.2)	2.049	1	0.152
	No	122 (89.7)	114 (83.8)			
Polyhydramnios	Yes	5 (3.7)	12 (8.8)	3.075	1	0.080
	No	131 (96.3)	124 (91.2)			
Diabetes mellitus	Yes	8 (5.9)	4 (2.9)	1.395	1	0.238
	No	128 (94.1)	132 (97.1)			

*Chi-Square assumption violated (more than 20% of expected frequency <5); hence Fishers Exact Test computed

Table 4: Comparison of labour complications of grandmultiparas and multiparas.

Labour complications	Grandmultiparas (n=136), N (%)	Multiparas (n=136), N (%)	χ^2	df	P value
Average length of labour time	5 hrs	8 hrs	-	-	-
Prolonged labour					
Yes	6 (4.4)	26 (19.1)	14.167	1	<0.001
No	130 (95.6)	110 (80.9)			
Obstructed labour					
Yes	7 (5.1)	3 (2.2)	1.661	1	0.197

Continued.

Labour complications	Grandmultiparas (n=136), N (%)	Multiparas (n=136), N (%)	χ^2	df	P value
No	129 (94.9)	133 (97.8)			
Cord prolapse					
Yes	9 (6.6)	0 (0.0)	-	-	0.003*
No	127 (93.4)	136 (100.0)			
Uterine rupture					
Yes	1 (0.7)	0 (0.0)	-	-	1.000*
No	135 (99.3)	136 (100.0)			
Mode of delivery - SVD					
Yes	92 (67.6)	78 (57.4)	3.075	1	0.080
No	44 (32.4)	58 (42.6)			
Breech delivery					
Yes	8 (5.9)	6 (4.4)	0.301	1	0.583
No	128 (94.1)	130 (95.6)			
Caesarean section (CS)					
Yes	30 (22.1)	42 (30.9)	2.720	1	0.099
No	106 (77.9)	94 (69.1)			
Vacuum extraction					
Yes	5 (3.7)	10 (7.4)	1.764	1	0.184
No	131 (96.3)	126 (92.6)			
Hysterectomy					
Yes	1 (0.7)	0 (0.0)	-	-	1.000
No	135 (99.3)	136 (100.0)			

*Chi-Square assumption violated (more than 20% of expected frequency <5); hence Fishers Exact Test computed

Table 5: Comparison of postnatal complications among grand multiparas and multiparas.

Postnatal complications		Grand multiparas Frequency (%) (n=136)	Multiparas Frequency (%) (n=136)	χ^2	Df	P value
PPH	Yes	22 (16.2)	9 (6.6)	6.153	1	0.013
	No	114 (83.8)	127 (93.4)			
Retained placenta	Yes	10 (7.4)	4 (2.9)	2.711	1	0.100
	No	126 (92.6)	132 (97.1)			
Lacerations	Yes	5 (3.7)	13 (9.6)	3.808	1	0.051
	No	131 (96.3)	123 (90.4)			
Anaemia	Yes	56 (41.2)	37 (27.2)	5.898	1	0.015
	No	80 (58.8)	99 (72.8)			
Puerperal sepsis	Yes	5 (3.7)	1 (0.7)	-	1	0.080
	No	135 (99.3)	135 (99.3)			
Preterm delivery	Yes	12 (8.8)	10 (7.4)	0.198	1	0.656
	No	124 (91.2)	126 (92.6)			
Maternal death	Yes	3 (2.2)	3 (2.2)	-	-	1.000*
	No	133 (97.8)	133 (97.8)			

*Chi-Square assumption violated (more than 20% of expected frequency <5); hence Fishers Exact Test computed

Apart from PPH (p=0.013), anaemia (p=0.015) and puerperal sepsis (p=0.080) there was no significant proportional difference between grand-multiparas and multiparas with regard to other observed postnatal complications: retained placenta (p=0.100), lacerations (p=0.051), preterm delivery (p=0.656) and maternal death (p=1.000). For PPH, there were significantly more cases among the grand-multiparas 22 (16.2%) than the multiparas 9 (6.6%). The odds of grand-multiparas developing PPH were 2.7 times the odds of multiparas with 95% C.I of 1.21-6.16. For anaemia, there were also significantly more cases among the grand multiparas 56 (41.2%) than the multiparous women 37 (27.2%). The odds of grand multiparas developing anaemia were 1.9 times the odds of multiparas with 95% C.I of 1.13-3.12 (Table 5).

DISCUSSION

Number of deliveries that occurred during the period of study

According to findings, the number of deliveries that occurred during the study period was 7,377. Out of that number, 136 (1.84%) were booked grand-multiparas and 4,568 (61.9%) were the booked multiparas. 1.8% of grand multiparas is quite a lower figure than the previously reported figures of 2.5% to 18.8% in Nigeria.[18] The relatively low prevalence of grand-multiparas observed in this study may be attributed to the ongoing trend toward smaller family sizes, increased use of family planning methods, the promotion of gender equality, and the prevailing economic challenges. This suggests that the rate of grand-multiparity in Nigeria may be declining, resembling the pattern seen in developed nations. The modal age group for both grand-multiparous women (73; 53.7%) and multiparous women (46; 33.8%) was 31-35 years, with the majority being under 40 years of age. This finding aligns with previous research conducted in Lagos, where the predominant age range was 30-34 years, but contrasts with results from Maiduguri, which reported a younger age range of 26-30 years. The variation may be linked to earlier marriage, teenage pregnancies, and early childbearing commonly observed in the northern regions of the country compared to the south.[19] The grand-multiparas and multiparas were mostly educated with majority of them having secondary and tertiary education, however those with more tertiary educational status were the multiparas. Grand-multiparity is commonly seen among rural dwellers and that could be as a result of lack of awareness and utilization of modern contraceptives.[20] There were more Christians than Muslims in both study groups, likely due to the predominantly Christian setting in which the study was conducted. This observation is consistent with earlier research indicating that awareness and utilization of contraceptives are generally higher among Christian women.[21]

Antenatal complications among the grandmultiparas compared to multiparas

Anaemia was significantly higher in the grand multiparas compared to the multiparas. This finding was in support of a previous report which stated that anaemia at booking was higher among the grand-multiparas than the multiparas.[22] Anaemia is a widely recognized complication of pregnancy among grand-multiparous women and has been documented in numerous studies.[4] The high prevalence of anaemia observed in this study may be linked to the high endemicity of malaria in the study area. These findings align with some findings which revealed that grand-multiparous women tend to have significantly lower haemoglobin concentrations during the antenatal period compared to multiparous women.[23] Placental complications, premature rupture of membranes, hypertensive diseases in pregnancy, post-date, DM, UTI and CPD, and still births have been found to be more in grand multiparas than multiparas. Conversely, conditions such as eclampsia, oligohydramnios, and polyhydramnios were observed more frequently among multiparous women than grand multiparas. This finding contrasts with some reports were complications like hydramnios and polyhydramnios can occur across all parity levels but are more common among grand multiparous women.[24]

Intranatal complications among the grandmultiparas in comparison with multiparas

The findings revealed that grand multiparous women were more prone to precipitate labour and umbilical cord prolapse, both of which can lead to adverse delivery outcomes. These observations were attributed to the relatively more relaxed perineal muscles and wider pelvic outlet observed in grand multiparous women compared to multiparas. Obstructed labour, incidences of uterine rupture and hysterectomy were higher with the grand-multiparas than the multiparas. These findings align with other studies where it was found that repeated pregnancies weaken the myometrium in grand multiparous women, reducing its ability to resist obstruction during labour.[25] Uterine rupture, one of the most serious risks is due to factors such as malpresentation, malposition, and weakened uterine muscles, vessels, and ligaments. Caesarean section and vacuum extraction were found to be more in the multiparas than in the grand-multiparas confirming some findings that caesarean section and vacuum extraction were more with the multiparous than in the grand-multiparous.[26] This could be as a result of the fact that grand-multiparous women have more spacious pelvic outlet than the multiparas.

Postnatal complications among grandmultiparas in comparison with multiparas

Anaemia, Post Partum Haemorrhage (PPH), and puerperal sepsis were the major complications higher in the grand multiparas as previously documented. The marked rise in anaemia among grand-multiparous women could be attributed to the increased incidence of postpartum haemorrhage (PPH) in this group. This observation supports the findings of studies conducted in Ilorin and Maiduguri where uterine atony was identified as the most common predisposing factor for PPH.[27] Repeated pregnancies lead to excessive fibrous tissue deposition in the myometrium, which subsequently reduces uterine contractility. Furthermore, multiple deliveries can impair effective myometrial retraction due to scarring, muscular exhaustion, and atherosclerotic changes in the uterine blood vessels, thereby weakening the ability of the uterus to effectively clamp down on its vasculature at postpartum in grand-multiparous women.[28]

There are some limitations to this study. This investigation was in FMC Umuahia, and for a period of five years, this may limit its generalization. Again, collection of data was affected by frequent industrial action of health workers during the period of study.

CONCLUSION

The government should increase accessibility of family planning services and women empowerment. The importance of booking and delivery in a well-equipped facility should be emphasized among the obstetric population so as to avoid and reduce the complications and ensure a healthier population.

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