

Grandmultiparity: Reason for index pregnancy, contraception and relationship to the Millennium Development Goals

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Abstract

Objective: To evaluate the reasons for index pregnancy and contraceptive use among grandmultiparas and relate these to the Millennium Development Goals (MDG).

Design: A matched case control study.

Setting: The antenatal clinic of the Department of Obstetrics and Gynaecology of the University of Ilorin Teaching Hospital, Ilorin, Nigeria.

Subjects/ participants: Subjects were grandmultiparas (para ≥ 5) who presented for antenatal care at the antenatal clinic of the hospital while controls were equal number of age, educational level and social status matched multipara (para 2-4) at the antenatal clinic from 1st January to 31st June, 2010 selected by purposive sampling.

Main outcome measures: Level of education, social status, awareness and use of contraceptives, reasons for index pregnancy and the relationship of these characteristics to the Millennium Development Goals. The data was analyzed using EPI-INFO 6 statistical package with p-value, odds ratio and confidence interval.

Results: There were 66 grandmultiparas during the study period; 30% had no formal education while 66.7% were of low social status with 30.3% in social class IV and 36.4% in class V. Contraceptive awareness and use were similar in grandmultiparas and controls; awareness was [90.9% vs. 93.9%, OR=0.65, CI= 0.17-2.4, P 0.7422] while use was 6.4% vs. 40.9%, OR= 0.83, CI= 0.41-1.66, P=0.7207. In both groups, the commonest contraceptive method was Depo-provera [16.7% vs. 15.1%, OR=1.12, CI=0.44-2.85, P 0.8120] while barrier method was the least used [3.0% vs. 6.1%, OR=0.48, CI=0.09-2.74, P=0.6761]. The mother's reasons for index pregnancy were desire for more children in 33.3%, previous perinatal death in 28.8% and desire for a specific gender in 19.7% of grandmultiparas.

Conclusions: Majority of grandmultiparas were poor, uneducated with desire for large families, poor contraceptive users and suffered previous poor perinatal

outcome. This is an indicator of a huge gap to fill in attaining the Millennium Development Goal-5 to improve maternal health by reducing maternal mortality by three quarters by 2015.

Keywords: Grandmultiparity, Grandmultipara, Millennium Development Goals

Introduction

Grandmultiparas remains common in low resource settings in contrast to the situation in developed countries where they are uncommon. They have been shown to contribute significantly to maternal mortality with 35-37% of maternal deaths in Benin-city[1] and 38.4% in Ilorin[2] both in Nigeria occurring in grandmultiparas.

Thus, in line with the Millennium Development Goal (MDG)-5 which aim to improve maternal health with a target of reducing maternal mortality ratio by three quarters by 2015, it is imperative to address this group of women who contributes significantly to maternal death. In addition, grandmultiparas occupy a central role for evaluating how close we are to achieving the Millennium Development Goals (MDGs) as a whole as this greatly impacts on the family unit, society and national development.

Pregnancy in grandmultiparas is made worse especially in sub Saharan Africa by the prevailing high level of poverty with its attendant malnutrition in these women. In addition, repeated pregnancies with short inter pregnancy interval is also rampant such that many are not able to replace loss from previous pregnancies before the next conception. Sequel to the poverty, majority of them are unable to afford the cost of modern antenatal care services and subsequently have unsafe deliveries at home or other places where skilled birth attendants are absent with no one to manage intrapartum and postpartum complications resulting quite often in maternal morbidities and mortality.

The aim of this study was to determine the current state of grandmultiparas and use them as a case study to evaluate efforts targeted at achieving the MDGs.

Materials and Methods

Study setting: The Department of Obstetrics and Gynaecology of the University of Ilorin Teaching Hospital [(UITH)], Ilorin, Nigeria.

Study design: This was a prospective case control investigation where the participants were grandmultiparas (Para ≥ 5) and equal number of age, educational level and socioeconomic status matched multiparas (Para 2-4) managed at the antenatal clinic of the hospital from 1st January to 31st July 2010.

Cases: These were pregnant women who had carried five or more previous pregnancies to viability (Para ≥ 5); Viability was defined as pregnancy lasting ≥ 28 weeks gestation irrespective of the outcome. Controls were multiparas (Para 2-4) who had carried between two to four previous pregnancies to viability irrespective of the outcome. The participants were those who agreed to participate in the study after the purpose was explained to them. A total of one hundred and thirty two participants who included sixty six grandmultiparas (Para ≥ 5) and equal number of matched multiparas (Para 2-4) were recruited for the study, after calculation of sample size [3, 4].

Procedure for data collection: All pregnant women were informed about the study at the antenatal clinic of the Obstetrics and Gynaecology Department, UITH, Ilorin. All consenting grandmultiparas who satisfied the inclusion criteria were recruited into the study after obtaining a written informed consent. Controls were age, education status and social status matched multiparas (Para 2-4) who consented to participate in the study.

Purposive sampling was applied in which all consenting participants were recruited. Questionnaire, which was previously pretested by the investigators was administered to all the participants at the antenatal clinic by the investigators with the help of four trained assistant interviewers. Social classification for the participants was done as recommended by Olusanjo *et al* [5].

Data analysis: The results were analyzed using the EPI-INFO-6 statistical software and the results expressed in tables form for comparison and calculations of p value, odds ratio and confidence intervals. P value < 0.05 was taken as the statistical significance.

Participants' consent: The purpose of the investigation was explicitly explained to the participants before commencement of the study and those willing to participate agreed to sign the relevant consent forms after they were assured of the confidentiality and annonymisity of their participation.

Ethical consideration: Ethical clearance was obtained from the ethical review committee of UITH, Ilorin before commencement of the study and which was conducted in accordance with institutional guidelines and the Helsinki declaration on the conduct of research in human subjects.

Results

There were a total of 66 grandmultiparas and 66 multiparous controls in the study; they were aged 25-48 years. From Table 1, 30.3% of grandmultiparas had no formal education, 27.3% had primary, 28.8% secondary and 13.6% tertiary education respectively. In addition, 66.7% of them were of low socio economic status with 30.3% and 36.4% belonging to social classes IV and V. By study design, the age and social classes were the same among grandmultiparas and controls.

Table 1: Educational status and social class of grandmultiparas

	Frequency	(%)
Level of formal education		
None	20	30.3
Primary	18	27.3
Secondary	19	28.8
Tertiary	9	13.6
Social class		
I	0	0
II	4	6.0
III	18	27.3
IV	20	30.3
V	24	36.4

Note: By study design, the educational status and social class were the same for grandmultiparas and multiparas.

Table 2 shows that there was a high contraceptive awareness among both the subjects and their controls.

However, grandmultiparas had a slightly lower level of awareness compared to controls {90.9% v 93.9%, OR=0.65, CI=0.17-2.4, P= 0.7422}; though the difference was not statistically significant. Also, use of contraceptive among grandmultiparas was 36.4% and 40.9% among controls and this was not statistically significant (OR=0.83, CI= 0.41-1.66, P= 0.7207). The various contraceptive methods used were injectable hormonal contraceptive {Depo-provera}, combined oral contraceptive pills, intrauterine contraceptive device (IUCD) and the barrier method. The commonest contraceptive method used among both the subjects and controls was the Depo-provera while the least used method was the barrier method. The methods used showed that the subjects had a slightly higher usage of the Depo-provera compared to the controls (16.7%v15.1%, OR= 1.12, CI= 0.44-2.85, P= 0.8120). Grandmultiparas had a slightly lower usage of all the other methods than multiparas though all were not statistically significant.

Table 2: Contraception awareness, usage and methods used among subjects and controls

	Grand multiparas n=66; (%)	Multiparous n=66 (%)	OR	CI	P-value
Awareness					
Yes	60(90.9)	62(93.9)	0.65	0.17-2.4	0.74
No	6(9.1)	4(6.1)			
Usage					
Yes	24(36.4)	27(40.9)	0.83	0.41-1.66	0.7207
No	42(63.6)	39(59.1)			
Method used					
None	42(63.6)	39(59.1)	1.21	0.60-2.44	0.5918
Depo-provera	11(16.7)	10(15.1)	1.12	0.44-2.85	0.8120
COCP	6(9.1)	7(10.6)	0.84	0.27-2.66	0.7702
IUCD	5(7.6)	6(9.1)	0.82	0.24-2.83	0.7528
Barrier	2(3.0)	4(6.1)	0.48	0.09-2.74	0.6761

IUCD = Intrauterine contraceptive device.

COCP = Combined oral contraceptive pills

Table 3 shows a broader range of reasons for index pregnancy among grandmultiparas compared to the controls. The reasons among grand multiparas ranged from desire for more children (33.3%), previous perinatal death (28.8%), desire for a specific gender among the children (19.7%), non compliance with contraceptive (13.6%) and new consort (4.5%).

However, among the multiparas, the reasons for index pregnancy were desire for more children (81.8%) and previous perinatal death. There was significant difference between the grandmultiparas and controls whose index pregnancy was due to desire for more children (OR=0.11, CI=0.05-0.25, P 0.001). No multiparas got pregnant because of desire for a particular gender of a child; this was not unexpected since they have not completed their family size.

Table 3: Reason for index pregnancy among subjects and controls

Reason given	Grand multiparas Freq (%),n=66	Multiparas Freq (%),n=66	OR	CI	P-value
Desire for more children	22(33.3)	54(81.8%)	0.11	0.05-0.25	0.00
Previous death of a child	19(28.8)	12(18.2)	1.82	0.80-4.14	0.15
Want specific gender	13(19.7)	0	NA	NA	
Non-compliance with contraception	9(13.6)	0	NA	NA	
New consort	3(4.5)	0	NA	NA	

NA = Not applicable

Discussion

The principal findings of this study were that about one in every three grandmultiparas had no formal education, while about two in every three of them were of low social class. In addition, despite a wide level of awareness, only one in every three of them was using modern contraceptive methods with Depo-provera as the commonest method. Of all grandmultiparas, the reason for index pregnancy was culture related in half of them (33.3% desired more children while 19.7% were seeking a baby of a particular gender). The reasons given by about one quarter of the respondents were health service related (28.3% were due to previous prenatal death). In all, 95.5% of the reasons for index pregnancy among grandmultiparas were preventable.

The high level of illiteracy reported in grandmultiparas compared with findings from Benin-city, Ile Ife and Enugu[6,7] where 57.5%, 81.5% and 61.6% of grandmultiparas were illiterates. The high level of low social class reported in this study was similar to 80.74% in Lagos, 62% in Enugu and 51.2% in Benin-City all in Nigeria [1,4,7]. These findings were not unusual since low literacy level as well as low socioeconomic status have been associated with desire to have many children.

The present study showed a high contraceptive awareness in both grandmultiparas and controls but a low uptake in both groups. This was comparable to the report in Benin city, Nigeria where 65% awareness level and 27% usage were reported [8] among grandmultiparas in Benin city, Nigeria [8]. Yet, this was higher than 7.8% usage rate reported among grandmultiparas in Ile-Ife, Nigeria [6]. The difference may be because Ilorin is a state capital like Benin-city where supplies of contraceptives may be better and the people more receptive to contraception unlike in Ile-Ife which is not a state capital. Besides, urban dwellers are more receptive to contraceptives [9], thus a higher degree of patronage.

Previous studies in Nigeria showed high knowledge and awareness rate about contraception but they consistently showed a poor uptake rate of the services [8,10,11]. The reasons attributed to this include the desire for large families, poverty, high parity, myths, fear of side effects, husband disapproval and male child preference [8,12,13]. In this study, there was a similar trend in contraceptive patronage by the study population. The commonest method was injectables followed by combined oral contraceptive pills and intrauterine contraceptive device. This agrees with the findings that injectables are becoming commoner with increasing uptake due to the advantage that it can be used discreetly without the knowledge of the partner [14]. However, oral contraceptive pills was reported as the commonest method used by grandmultiparas in Benin City, Nigeria [8].

Contraceptive prevalence in Nigeria was 11-13% and is below the sub Saharan average of 17% [9]. Areas of low contraceptive prevalence rate have been associated with high maternal mortality ratios [15] and Nigeria has been quoted to have the second highest maternal mortality in the world [16]. Low contraceptive use results in high fertility rate, high number of children per woman, large family units, larger population and a shorter population doubling time for the nation.

The data indicated that the two commonest reasons for index pregnancy among grandmultiparas were desire to have more children (33.3%) and previous death of a child (28.8%). These were similar to the findings of Kuti *et al* [6] who recorded the commonest reasons as desire for more children (25.9%) and death of a previous child (24.1%) among grandmultiparas in Ile-Ife, Nigeria [6].

Grandmultiparity has been shown to contribute significantly to maternal mortality where 35-37% of maternal deaths were recorded in Benin City [1] and 38.4% in Ilorin [2] both in Nigeria. This study is in line with the Millennium Development Goal where the finding represents a good predictor for evaluation of efforts towards achieving the MDGs. The strength of the study was its design as a case control study which allowed comparison with multiparas as controls. The limitation was the relatively small sample size and the use of one study centre.

Grandmultiparity and the Millennium Development Goals [MDGs]: The MDGs represent a worldwide collaborative effort to reduce poverty and hunger, tackle ill-health, gender inequity, lack of education, lack of access to clean water and environmental degradation [17].

MDG 1: Eradication of extreme poverty and hunger

The vicious cycle of poverty, hunger and diseases have long been known; the poor are more exposed to personal and environmental factors that predispose to diseases and they are less likely to access health care [18]. The report of 66.7% of grandmultiparas being of low social classes suggests that we still have a long way to go in eradicating poverty and hunger.

MDG 2: Achieve universal basic education

Literacy increases health seeking behaviours; the 30.3%

no formal education status among grandmultiparas in this study is far from the desired universal basic education by the year 2015 which is just around the corner.

MDG 3: Promote gender equality and empower women

In many developing countries, gender inequality is still demonstrated in form of preferences for specific gender by parents among the off springs. In many cultures, the care and investment in education still depend on the gender of the child with the balance in favour of male children. About a third of grandmultiparas in this study attributed the reason for index pregnancy to this wrong cultural norm. It has been reported that women empowerment and the ability to have a say in fertility choices has an association with the use of family planning methods while a low income level and partner's approval are linked with low contraception uptake [19].

MDG 4: Reduce child mortality

High infant mortality rates still abound in many developing countries including Nigeria. This was evident in this study in which 28.3% of grandmultiparas attributed index pregnancy to previous perinatal deaths. This showed a reduction in the birthing interval, possible absence of skilled birth attendants with skill in neonatal resuscitation at all deliveries and addressing of strategies to improve child survival will be desired in this populace.

MDG 5: Improve maternal health

Poverty has been associated with poor health seeking behavior and reduced access to reproductive services. These poor grandmultiparas are unlikely to deliver with skilled birth attendants thereby hindering the actualization of Target 6 which is aimed at the presence of skilled birth attendants at all deliveries. The significant contribution of grandmultiparas to maternal mortalities in Benin City [1] and Ilorin [2] as cited above calls for more pragmatic efforts at reducing the incidence of grandmultiparity to lower these deaths. Family planning is important for improved maternal health; it enables the mothers to plan when and how soon to become pregnant thereby eliminating risky pregnancies. However with grandmultiparity the risk increases exponentially.

MDG 6: Combat HIV/AIDS, malaria and other diseases

Target 6 seeks to increase contraceptive use among currently married women aged 15-49 years as well as promote condom use. The low contraceptive uptake among participants in this study as well as the low condom use in particular does not suggest an improvement from the situation since the introduction of the MDGs.

MDG7: Ensure environmental sustainability

Target 9 seeks to integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental reserves. Uneducated women of low social class as demonstrated in this study are likely to use firewood in cooking which will lead to depletion of forest areas, reduction in proportion of protected land surface area and increase in carbon dioxide emission contributing to further depletion of the ozone layer. In addition, increased waste production, conversion of land for recreation into residential and other activities as well as use of funds for environmental protection on meeting the challenges of overpopulation will worsen environmental sanitation.

MDG 8: Develop global partnership for development

Target 8 seeks to make available the benefit of new technologies, the indicators include number of internet users, internet users per 100 population, personal computers and personal computers per 100 population. There is no doubt that a 30.3% illiteracy level among grandmultiparas does not favour this target. Thus, the benefit of these avenues in education on reduction of harmful cultural practices, improvement of health seeking behavior and health education are jeopardized.

Conclusion

Culture related factors of desire for large families and specific gender among off springs were responsible for 53% of pregnancy in grandmultiparas in this study. Despite a high contraceptive awareness among grandmultiparas, usage remains low. Perinatal death remains reasonably high with 28.8% desiring index pregnancy to replace a previous perinatal loss. These reports show that there is still a lot to be done towards actualization of the MDGs. The study demonstrated the continuing presence of grandmultiparity and the implication on the MDGs; it presents a template for a multicentre survey to allow wider generalization of the results.

Recommendations

From the results of this study, cultural reorientation occupies a central role as a major strategy in preventing grandmultiparity and its attendant pregnancy complications. It shows that there is the need to intensify community-based interventions to dissuade our women from grandmultiparity. The awareness but low patronage of contraceptives further corroborates this need.

In addition, there is need to improve child survival strategies to increase infant survival since about a quarter of pregnancies in this study were due to previous perinatal loss.

Finally, all stake holders must rededicate resources towards the actualization and sustenance of the MDGs.

Sponsorship/ conflict of interest

The study was self sponsored by the researchers and there was no conflict of interest in the conduct of the study.

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