***BRIEF COMMUNICATION***

# Grand multiparity at Jimma hospital

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***Abstract:*** ***A comparative study was conducted to analyze the reproductive performance of grand multiparas at Jimma Hospital from June 1992 to March 1993. The incidence of grand multiparity was 16%. The age ranged from 24 to 50 years with a mean age of 34 years. Complications necessitating antenatal admission to hospital occurred in 18% of grand multiparas as compared to 5% for the non-grand multiparas. There were a total of 7 maternal deaths during the study period, five of whom were grand multiparas. The over all perinatal mortality rate was 97 per 1000 births; forty percent of the perinatal deaths occurred in grand multiparas. The leading causes of perinatal death were ruptured uterus (35%), obstructed labor (19%), and congenital malformations (15%). The need for an improvement in the antenatal care, and family planning service is stressed.***

## Introduction

Of all the indicators of women's health, maternal mortality rates show the largest disparity between women living in the poorest countries of the world and those living in the industrialized countries (1). Of the half million or more women's deaths related to pregnancy and child birth each year, all but about 4000 occur in the developing countries that account for 87% of the world's births. Maternal mortality ratios are highest in Africa, with values of up to 1000 deaths per 100,000 live births in several rural areas and of over 500 per 100,000 in some cities (2,3). Over all in Sub-Saharan Africa, high maternal mortality ratios are compounded by high fertility; there being an average of eight live births per woman. An African woman's lifetime risk of dying from pregnancy related causes often exceeds 1 in 20 (1-3).

In Ethiopia, there is a high incidence of complications of pregnancy, labor and puerperium, in addition to intercurrent diseases. In a community-based study in Addis Ababa, Kwast et al reported that the maternal mortality rate was 566 per 100000 births (4).

Grand multipara women are at increased risk of maternal and perinatal mortality and morbidity due to antepartum hemorrhage, postpartum hemorrhage, and obstructed labor associated with abnormal fetal lie or

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presentation. Lack of transportation, high illiteracy rates, low family planning services, poverty, and malnutrition play important role in this problem (4).

The objective of this study was to describe the reproductive performance of grand multiparas in Jimma Hospital.

## Methods

The study was carried at Jimma Hospital, Jimma town – southwest Ethiopia, from June 1992 to March 1993. The antenatal course, intrapartum performance, and neonatal outcome of one hundred and one (101) grand multipara women who came to the hospital for delivery during the study period was recorded. An equal number of non-grand multipara women who delivered immediately after each study subject were taken for comparison. Mothers who delivered out side the hospital were excluded from the study.

The investigator developed a structured questionnaire and the following parameters were evaluated: antenatal complications, antepartum hospital admissions, labor induction rates, gestational age at delivery, intrapartum complications, mode of delivery, neonatal outcome and congenital anomalies.

In this study grand multipara is defined as a mother who has had five or more viable pregnancies. Post-partum hemorrhage (PPH) is defined as heavy bleeding which leads to hypotension (shock), and necessitates manual removal of the placenta or blood transfusion.

## Results

There were a total of 647 deliveries during the study period, of which 101 (16%) were in grand multiparas. The age distribution of the study subjects, 101 grand multiparas and equal number of non-multipara comparison groups, is shown in table 1. The age ranged from 24 to 50 years with a mean of 34 years. Forty-four percent of the grand multipara mothers resided outside Jimma town, compared with 21% for the non-grand multiparas, and the majority (67%) were illiterate, compared with 22% for the controls (Table 1).

**Table 1:** Characteristics of mothers studied, Jimma Hospital, 1993.

| Variables | Grand multipara No. (%) | Non-grand multipara No. (%) |
|---|---|---|
| Age (in years) | | |
| < 20 | 0 | 23(22.8) |
| 20-24 | 1(0.01) | 29(28.7) |
| 25-29 | 10(9.9) | 35(34.7) |
| 30-34 | 34(33.7) | 7(6.9) |
| > 34 | 56(55.5) | 7(6.9) |
| Maternal residence | | |
| Jimma | 57(56.4) | 80(79.2) |
| Outside Jimma | 44(43.6) | 21(20.8) |
| Literacy status | | |
| Illiterate | 68(67.3) | 22(21.8) |
| Literate | 33(32.7) | 79(78.2) |
| Antenatal care | | |
| Yes | 54(53.5) | 73(72.3) |
| No | 47(46.5) | 28(27.7) |

Fifty four percent of the grand multiparas were booked for antenatal care (the corresponding figure for the non-grand multiparas was 72%). Complications necessitating antenatal admission to hospital occurred in 18% of the study subjects compared with 5% for the controls. The difference was statistically significant at $p<0.05$.

Antenatal complications observed in both groups is shown in table 2.

Table 3 shows the mode of delivery and complications in the studied mothers. The caesarian section (C/S) rate of grand multiparas was 11% (7% for non-grand multiparas). Hysterectomy was performed in 10% as compared to 2% for the comparison group ($p<0.05$). Primary post-partum hemorrhage (PPH) occurred in 8% of grand multiparas compared with 4% for the controls. About 9% of the grand multiparas received blood; the main indication being uterine rupture.

**Table 2:** Antenatal complications observed in grand multiparas and their controls, Jimma Hospital, 1993.

| Complications | Grand Multiparas No. (%) | Non-grand multiparas No. (%) |
|---|---|---|
| - Polyhydramnious | 6( 6) | 1(1) |
| - Hypertensive disorders of pregnancy | 2(2) | 1(1) |
| - Antepartum hemorrhage | 4(4) | 1(1) |
| - PROM* | 6(6) | 1(1) |
| - Preterm labor | 10(10) | 5(5) |
| - Malpresentations** | 26(26) | 13(13) |

* premature rupture of membranes
** $p<0.05$

Tubal ligation during C/S, in the immediate post - partum period or at the end of the puerperium was carried out in only 14%.

There were a total of 7 maternal deaths during the study period making the maternal mortality rate (MMR) 11.9 per 1000 live births. Five (75%) of the maternal deaths occurred in grand multiparas.

The mean birth weight for singletons was 3287.3 gms, and low birth weight accounted for 12% of singleton babies for grand multiparas (data not shown). Congenital malformations were observed in 12% (of these 31% were lethal) and 5% of the neonates born to grand multiparas and their controls respectively. The difference was statistically significant ($p<0.05$).

**Table 3:** Modes of delivery and immediate complications of mothers studied, Jimma Hospital, 1993.

| Variable | Grand multipara No.(%) | Non-grand multipara No. (%) |
|---|---|---|
| Method of delivery | | |
| . Spontaneous vertex | 68(62.9) | 70(65) |
| . Vacuum extraction | 4(3.7) | 10(9.3) |
| . Forceps delivery | 2(1.9) | 1(0.9) |
| . Breech delivery | 13(12) | 10(9.3) |
| . Cesarean section | 11(10.9) | 7(6.9) |
| . Hysterectomy | 10(9.9) | 2(1.9) |
| . Craniotomy | 1(1) | 5(5) |
| . Oxytocin augmentation | 3(3) | 4(4) |
| Maternal complications | | |
| . Manual exploration | 4(4) | 3(3) |
| . PPH | 8(7.9) | 4(4) |
| . Blood transfusion | 9(8.9) | 2(1.9) |
| . Ruptured uterus | 9(8.9) | 2(1.9) |
| Fetal/ neonatal complications | | |
| Total births | 107 | 106 |
| . Still birth | 18(16.8) | 1(10.4) |
| . Neonatal death | 8(7.5) | 7(6.6) |
| . Congenital malformations | 13(12.1) | 5(4.7) |

There were a total of 26 perinatal deaths among 107 babies born

to grand multiparas (18 stillbirths and 8 neonatal deaths) making the stillbirth to neonatal death ratio 2.25:1 (Table 3). The overall perinatal mortality rate during the study period was 97 per 1000 births. Grand multiparas contributed more than their share to the perinatal mortality; 40% of the perinatal deaths occurred in grand multiparas. The causes of death are shown in table 4.

**Table 4:** Causes of death in 26 perinatal deaths, Jimma Hospital, 1993.

| Causes of perinatal death | Percent |
|---|---|
| - uterine rupture | 34.5 |
| - obstructed labor | 19.2 |
| - congenital anomalies | 15.4 |
| - antepartum hemorrhage | 11.5 |
| - prematurity | 11.5 |
| - cord prolapse | 3.9 |
| - unexplained | 3.9 |

The relationship of antenatal care (ANC) follow-up to perinatal outcome is shown in table 5.

**Table 5.** Relation of Antenatal care (ANC) to perinatal outcome in all 202 mothers studied, Jimma Hospital 1993.

| Outcome | Percent occurrence ANC | No ANC | P-value |
|---|---|---|---|
| LBW (<2500gms.) | 31.8 | 68.2 | P=0.02 |
| Still birth | 5.6 | 94.4 | P<0.0001 |
| Neonatal death | 37 | 63 | P=0.10 |

## Discussion

The results of this work are based on hospital population and therefore may not represent the true picture in the community. Despite this limitation, however, several inferences can be made. Most of the grand multiparas were found to be illiterate, not booked for antenatal care and live in rural areas. Furthermore, the maternal and perinatal mortality, and morbidity was high among the grand multiparas. Perinatal outcome was found to be better in mothers who had antenatal care, particularly for low birth weight and still birth.

There is a general agreement that pregnancy outcomes are more favorable for multiparas than primiparas. Grand multiparity however is often believed to constitute a risk (5). The incidence of grand multiparity (16%) was found to be higher than previous reports (6). This could be related to poor socioeconomic status, high illiteracy rates, and poor family planning services (4). The current study has also documented that grand multiparas were more likely to be illiterate and live outside Jimma town.

Complications necessitating admission to hospital in this study occurred in 18% of the grand multiparas, which is similar to that reported by Baskett (6). The causes were also similar except that polyhydramnious was the leading cause of admission in this study. The higher occurrence of premature rupture of membranes noted in our study may be explained by the relatively high rates of malpresentations (26%) and polyhydramnious (6%).

Uterine rupture occurred in 9% of the subjects, which is high when

compared to other studies (4). Inadequate antenatal care, higher rate of malpresentations, and poor access to health facilities could all contribute to this complication.

Our results show that the contribution of grand multiparas to maternal mortality (75%) is higher as compared to other studies (7). As in another study from the same hospital (4), uterine rupture and sepsis were the leading causes of maternal death. This, in turn, may be a reflection of low health service coverage, low socioeconomic status, and poor transportation. Post-partum hemorrhage was the leading cause of death in a community-based study in rural Gambia (8).

The higher mean birth weight in this study is in accord with other reports (5,7,9). The low birth weight rate of 12% is not different from other reports on birth weight of singleton babies from Ethiopia (10). Congenital anomalies were found in 12% of the babies born to grand multiparas which is higher than the controls as well as previous reports (4,6). Comparison with the other studies quoted may be difficult, however, as their sources of data were hospital records which may underestimate the problem. The grand multiparas were older than the controls in the current study which may be a contributory factor for the higher rate of congenital malformations.

As with our results, the higher contribution of grand multiparas for perinatal deaths has been documented by other studies (5,6,8,11). The still birth to neonatal death ratio of 2.25: 1 indicates the importance of maternal biologic factors in perinatal mortality. The leading causes of perinatal death according to the study done by Ghidey et al (4) were obstructed labor and uterine rupture. In the current study, uterine rupture, obstructed labor, and lethal congenital malformations were the leading causes.

Among the many underlying causes of maternal mortality, the contribution made by unregulated fertility is particularly important. Family planning is an integral and inseparable part of maternal and child health programs, and it is indispensable in the struggle to prevent maternal deaths. Hence, health workers should regularly counsel on family planning, and it must be universally available to avoid unwanted or high risk pregnancies.

The current study showed that grand multiparity is frequent among women who came to deliver in Jimma hospital. Grand multiparas are prone to several prenatal, natal and postnatal complications in the mother and fetus/baby pair. On the other hand, only about half of these high risk mothers visited antenatal care. Education about the risks associated with repeated pregnancies should be given, and mothers should be encouraged to use antenatal services. There is a need to develop some form of antenatal care appropriate for our setup with a viable referral system. Communications must be improved so that early and prompt referral of patients to hospital is feasible. The consequences of grand multiparity must be presented clearly and parity of such amount should be discouraged through easily accessible family planning service. Tubal ligation was carried out in a minority of grand multiparas, and we recommend that facilities for post partum tubal ligation should be made available at the hospital. A community based study is needed to define the magnitude of grand multiparity and the associated complications.

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