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Study of magnitude of grand multiparty and its perinatal outcome in a tertiary hospital of rural area in Maharashtra

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ABSTRACT

Background: Grand multiparous pregnancies have been considered to be at higher risk of developing antenatal and perinatal complications like pre-eclampsia, gestational diabetes mellitus, anemia, antepartum hemorrhages, preterm labor, mal-presentation, mal-position and feto-pelvic disproportion This study was done to know the magnitude of grand multipara attending the tertiary care center with possible complications related to high parity.

Objectives: To study the prevalence possible feto-maternal complications associated with grand multipara at rural setup. **Methodology**:Descriptive cross-sectional study conducted in medical college of rural area for 12 months. Grand multipara with 5 or more deliveries before current pregnancy coming for antenatal checkup and delivery were enrolled. Antenatal history was recorded till delivery and feto-maternal outcomes were noted.

Results:Out of 1500 deliveries conducted during study period, 110 (7.5%) cases were grand multipara. Majority of them (79.5%) were Muslim and 80% were anaemic. 60% delivered with FTND, and 25.4% had emergency LSCS with one intrauterine death and a single breach delivery. Predominantly preeclampsia (23.6%) and malpresentation (14.5%) were diagnosed as antepartum complications. Almost one fifth of them had postpartum hemorrhage which was controlled with no mortality. 13 (11.8%) grand multipara women had still birth or early neonatal death, though fetal distress was observed in 37 cases. **Conclusion:** Grand multiparty is still a high-risk pregnancy associated with adverse maternal and fetal outcomes in our facility with multiple interrelated but mostly preventable causes.

KEYWORDS: Grand multipara, Preeclamsia, PPH, Fetal distress, Antepartum hemorrhage

INTRODUCTION:

Relationship between parity and pregnancy outcome has been of concern for decades and associations have been found between parity and adverse pregnancy outcomes. The International Federation of Gynecology and Obstetrics (FIGO) defined grandmultipara as women who have delivered fifth to ninth fetuses, whereas women who have delivered ten or more times considered to be great grand multiparas. Grand multipara is associated with adverse perinatal outcome. The risk to the mother and child is relatively high in primipara and steeply rises after 5^{th} pregnancy [1].

The incidence of grand multipara has decreased in most western countries since two generations due to better socioeconomic and educational status and availability and utilization of contraceptive services [2]. Proportion of multipara varies between 1 and 18 percent between developing and developed countries [3–5]. Grand-multiparous pregnancies have been considered to be at higher risk of developing antenatal complications like pre-eclampsia, gestational diabetes mellitus, anemia, antepartum hemorrhages, preterm labor, mal-presentation, mal-position and feto-pelvic disproportion [6]. Uterine inertia, dysfunctional labor, rupture uterus, IUD, more weight for gestational age and operative deliveries are other rare complications [7]. Grand multiparty is still rampant among women of low socioeconomic class and in those getting married at a younger age. Other factors contributing to its prevalence are illiteracy, religious beliefs and norms which are a stumbling block to greater contraceptive use. Some authors concluded that in a developed country with optimal health care conditions, grand multiparty should not be considered dangerous [8–10]. This study was done to know the magnitude of grand multipara attending the tertiary care center with possible complications related to high parity.

Methodology: This Descriptive cross section study was carried out at the department of Obstetrics and Gynecology JIIU's IIMSR medical college, Warudi, Jalna, Maharashtra. The study was performed over 12 months' period from 1^{st} January 2021 to 31^{st} December 2021. Ethical Clearance was obtained from Institutional Ethics Committee. During the period, all pregnant women who had previously given birth to five or more times (grand multipara) were included

in the study. A pretested questionnaire was used for the collection of obstetric history, socio-demographic data, antenatal complications of pregnancy and feto-maternal outcome was also recorded. Antenatal history was recorded till delivery and feto-maternal outcomes were noted. Data was entered in MS Excel and presented as number and percentages.

RESULTS:

During the study period of one year, total1500 deliveries conducted and among them, 110 (7.33%) cases were grand multipara. Their mean age was 27 years and 51 grand multipara women were below 30 years of age suggesting early marriage (average marriage age- 17.4 ± 4.7 years). Majority of them (78.2%) were Muslim and 67.3% had four or more ANC visits in current pregnancy. Anemia was diagnosed in 80% of cases at first ANC visits and 26 (23.6%) of them had severe anemia. Less than 10% women were known cases of hypertension, diabetes and hypothyroidism whereas almost 15% had previous Caesarean section, 10% had previous abortion history and almost 9% had preterm delivery.Table 1

Maternal Complications: With proper treatment, anaemia remained in 28% of grand multipara women at third trimester. Predominantly preeclampsia (23.6%) and malpresentation (14.5%) were diagnosed as antepartum complications along with some cases of gestational diabetes (6.4%), placenta previa (3.6%), twin pregnancy (2.7%) and few cases of poly and oligohydramnios. Intrapartum complications included mainly antepartum hemorrhage (25.4%), obstructed labour (19.1%), and cord prolapse (5.5%). Almost one fifth of them had postpartum hemorrhage which was controlled with no mortality.Table 2

Mode of Delivery: Almost 60% had normal full term vaginal delivery (80% of them were induced labour). And 25.4% of them were delivered with emergency cesarean section because of various maternal and fetal complications.Table 3

Fetal Complications: 13 (11.8%) grand multipara women had still birth or early neonatal death, though fetal distress (APGAR score below 5) was observed in 37 cases who needed immediate intensive care. And 22 cases had meconium aspiration and only two cases had congenital malformation at birth.Table 3

Characteristics	No. (%)
Age (Mean±SD)	26.9 ± 6.3 years
25 to 30 years	51 (46.4)
31 to 35 years	28 (25.5)
Above 35 years	31 (28.1)
Religion	
Hindu	21 (19.1)
Muslim	86 (78.2)
Other	03 (02.7)
Marriage age(Mean±SD)	17.4 ± 4.7 years
Complete ANC visits in current pregnancy	74 (67.3)
Medical Problems in current pregnancy*	
Hypertension	08 (7.3)
Gestational Diabetes	05 (4.5)
Hypothyroidism	03 (2.7)
Anaemia at first ANC visit	88 (80.0)
Severe Anaemia at first ANC visit	26 (23.6)
Previous LSCS	16 (14.5)
Previous history of preterm delivery	10 (09.1)
Previous abortion	11 (10.0)

Table 1: Demographic and medical history of grand multipara women (N=110)

DISCUSSION:

Grand multiparty has become are issue in developed countries, but it is still common in some parts of developing countries like India. The prevalence of the grand multiparity was found to be 7.33% in our study and majority of them (78.2%) were Muslim. The overall prevalence of grand multiparity varies in different countries ranging from 1% to 30%as per their demographic profiles with higher rates in Muslims who have large family norms and poor acceptance of family planning methods. [11, 12] Many women (46%) in this study were less than 30 years of age but many studies reported higher age of grand multipara women like D'Souza K et al. [13] and Roy et al. [14]. The vast majority of women were found anaemic which is consistent with many studies findings. [3, 12–15]

Predominantly preeclampsia (23.6%) and malpresentation (14.5%) were diagnosed as antepartum complications along with some cases of gestational diabetes (6.4%). These findings were consistent with many studies [5, 6, 16, 17] but some studies [18, 19] reported lower antepartum complications in grand multipara women.

Intrapartum complications included mainly antepartum hemorrhage (25.4%), obstructed labour (19.1%), and cord prolapse (5.5%). Almost one fifth of them had postpartum hemorrhage which was controlled with no mortality. These findings were consistent with Incim B et al. [16] and Shechter Y et al. [20]

Additionally, fetal distress was significantly more common in grand multipara women. In our study, 13 (11.8%) grand multipara women had still birth or early neonatal death,

Maternal Complications	No. (%)
Antepartum Complications*	
Anaemia in third trimester	31 (28.2)
Preeclampsia	26 (23.6)
Gestational Diabetes	07 (06.4)
Twin pregnancy	03 (02.7)
Placenta Previa	04 (03.6)
Malpresentation	16 (14.5)
Polyhydramnios	02 (01.8)
Oligohydramnios	03 (02.7)
Intrapartum and Postpartum Complications*	
Antepartum Hemorrhage	28 (25.4)
Postpartum Hemorrhage	19 (17.3)
Preterm labour	15 (13.6)
Obstructed labor	21 (19.1)
Meconium-stained liquor	10 (09.1)
Cord prolapse	06 (05.5)
Uterine atony	09 (08.2)
Abruptio placentae	04 (03.6)

*Some cases had two or more problems.

Table 2: Maternal Complications in grand multipara women (N=110)

Mode of Delivery and Fetal Outcomes	No. (%)
Mode of Delivery	
Full term Normal Delivery	65 (59.1)
Elective Caesarean Section	16 (14.5)
Emergency Caesarean Section	28 (25.4)
Full term Breach Delivery	01 (00.9)
Fetal Outcome and Complications*	
Still birth or early neonatal death	13 (11.8)
Fetal Distress who needed intensive care	37 (33.6)
Meconium Aspiration	22 (20.0)
Congenital Malformation	02 (01.8)

* Some cases had two or more problems.

Table 3: Mode of delivery and fetal Complications in grand multipara women (N=110)

though fetal distress (APGAR score below 5) was observed in 37 cases who needed immediate intensive care. Similar results were reported by Incim B et al.[16] and Singh SP et al.[19]

CONCLUSION:

Grand multiparty is still a high-risk pregnancy in our facility with many interrelated causes. In our study, grand multiparty was associated with adverse maternal and fetal outcomes. Hence, there is need for promotion of family planning methods in those localities and proper and timely care during intrapartum to postpartum phases of pregnancy in grand multipara women.

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