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ORIGINAL PAPER

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# The Prevalence, the Fetal and Maternal Outcomes in Grand Multiparas Women

Maha Hussain Alhainiah<sup>1</sup>, Hasan S.O. Abdulljabbar<sup>2</sup>, Yasir Ahmad Bukhari<sup>3</sup>

<sup>1</sup>King Abdulaziz University Hospital, Jeddah, Kingdom of Saudi Arabia

<sup>2</sup>Department of Obstetrics and Gynecology, Medical College, King Abdulaziz University, Jeddah, Kingdom of Saudi Arabia

<sup>3</sup>Obstetrics and Gynecology Department, King Abdulaziz University Hospital, Jeddah, Kingdom of Saudi Arabia

## Corresponding author:

Hassan S.O. Abdulljabbar MD, FRCS. Professor and Consultant, Department of Obstetrics & Gynecology, Medical College, King Abdulaziz University, P.O.Box 80215 Jeddah 21452, Kingdom of Saudi Arabia. ORCID ID <https://orcid.org/0000-0002-7454-5295>, Tel: +966 12 6408310 Fax: +966 12 6408341; mobile 00966 505 600 956 E-mail: profaj17@yahoo.com

## ABSTRACT

**Introduction:** The incidence of grand multiparity in Saudi Arabia is high; there are no adequate studies about the grand multiparity. **Aim:** The aim to determine the prevalence, fetal and maternal outcomes in grand multipara women in comparison to primipara's women. **Methods:** A retrospective study, the data was collected from our hospital records of labour and delivery unit started from January 2016 to December 2016. **Results:** The analysis was done in 415 charts divided into two group 1 consist of (120 primigravidas) used as the control and group 2 the study group (295 grand multiparas). When comparing the maternal age between the two groups, grand multipara was older (mean of  $36.9 \pm 4$ ), and primigravida age ( $33.5 \pm 5.7$ ) with a p-value  $< 0.001$ . The fetal weight, Gestational age, and Apgar score at 1, and 5 min, the type of delivery, medical disease are common in grand multipara and statistically significant  $P < 0.001$ . However, HTN is more common in primigravida but not statistically significant with P value  $< 0.287$ . Premature rupture of membrane. Intrauterine growth retardation breech presentation and preterm labour, Placental abnormality and postpartum haemorrhage more common in grand multipara and statistically significant a p-value  $< 0.001$ . The neonatal outcome, ICU admission, intrauterine fetal death all were similar in each group, not statistically significant. Logistic regression performed of a different variable. **Conclusion:** Grand multipara is common in our institution and the outcome of medical diseases, and obstetrical complication is more in grand multipara than primigravida.

**Keywords:** grand multipara, primigravida Saudi Arabia.

## 1. INTRODUCTION

Grand multiparity defined as giving live birth or stillbirth after  $\geq 20$  gestational weeks, of Five or more, and multiparity is giving birth to less than

four and more than two and primiparity defined as giving live birth once (1).

Grand multiparity is a family burden and a risk factor for increasing antenatal and postnatal as well as maternal complications such as anemia, diabetes mellitus, hypertension, increased the rate of cesarean section and postpartum hemorrhage (2). However, in recent studies, it shows that with good perinatal care and routine follow up it decreases the risk of complication in the presence of a pleasing health condition (3).

It is becoming less of concern in the developed countries with low prevalence 3-4% of all births due to family counseling, planning and because of the widespread usage of contraceptive practice while in the developing countries it is still of a great concern and still high in prevalence (4).

In Saudi Arabia Grand multiparity is widely spread, common due to cultural beliefs, and social habits in the society, marriage at a young age and consanguinity could attribute to have more children, and it is rather expected in the family, and low socioeconomic status has been associated with poor pregnancy outcomes in grand multiparas women.

In a recent study done by World Bank, it was reported that the fertility rate in Saudi Arabia in 2013 was 2.64 (5) and the United States reported at 1.87 (6) despite the fact that the two countries differ in area capacity and population Saudi Arabia is higher in incidence.

The high incidence of grand multiparity in Saudi Arabia could have many reasons such as cultural beliefs and the early age of marriage, therefore in this study we are aiming to determine the prevalence, fetal and maternal outcomes in grand multiparas women, in comparison to a multiparas and primiparas women in a tertiary hospital in western region of Saudi Arabia. There is no adequate number of studies that performed about the grand multiparity prevalence, fetal and maternal outcomes in Jeddah, Saudi Arabia therefore; such a study is needed.

## 2. METHODS

In this retrospective study, the data was gathered in a tertiary center at King Abdulaziz University Hospital in Jeddah, Saudi Arabia which is a governmental teaching hospital where medical care is provided free of charge.

We collected the data from our hospital records of labor and delivery unit started from 1st of January 2016 to December 2016 in attempt to determine the maternal and fetal outcomes of grand multiparas compared to primiparity and assessing the prevalence of grand multiparity in KAUH.

A total of 928 deliveries performed at KAUH, 295 (31.7%) were Grand multiparas, and 513 were multiparas (para 1-4) and 120 (15.5%) primigravida. In this study we excluded all females who gave birth less than 5 and matched it to females giving birth for the first time for comparison between the two outcomes.

Sociodemographic factors, neonatal morbidity and obstetric complications in both groups documented from the case file.

Maternal variables including chronic illnesses such as asthma, hypothyroidism, epilepsy, diabetes mellitus, Gestational diabetes, hypertensive disorders of pregnancy, placental abruption, placenta previa, premature rupture membrane breech presentation, postpartum hemorrhage, preterm labor and mode of delivery. Each of these variables analyzed contrary to each group.

Fetal variables that we considered in this study were Admission to the nursery, Apgar score, fetal death, fetal weight, small for gestational age, gestational age at delivery, fetal distress and macrosomia.

Macrosomia defined as fetal weight greater or equal to 4000g. Each of these fetal complications assessed against each group.

Ethical approval obtained from King Abdulaziz University IRB and the methods carried out in "accordance" with the approved guidelines.

## 3. RESULTS

The analysis done in 415 charts from King Abdulaziz University Hospital, the delivery room divided into two group 1 consist of (120 primigravidas) used as the control and group 2 the study group (295 grand multiparas). When comparing the maternal age in years between the two group using chi-square test grand multipara women were older with a mean of  $36.9 \pm 4.6$  and primigravida age were an average of  $33.5 \pm 5.7$  with a p value  $< 0.001$ . The average of the fetal weight of the newborn of grand multipara gravida was  $6067 \pm 710.9$  were heavier and statistically significant with a p-value  $< 0.001$ .

The difference between the two group of Gestational age and Apgar score at 1 and 5 min. were not statistically significant with a p-value of  $< 0.141$ ,  $0.749$  and  $0.948$  (Table 1).

This is a comparison between the two group (primigravida and grand multipara) on the type of delivery, medical disease (GDM, Anemia, and others) all are common in grand

	Primigravida 120	Grandmultipara 295	
	Min-Max (mean±SD)	Min-Max (mean±SD)	P value
Maternal age	21-45 (33.5±5.7)	23-55(36.9±4.6)	P < 0.001
Gestational age	4-42(37.7±4.6)	24-45(38.2±2.8)	P < 0.141
Number of pregnancies	1-1(1±0)	1-17(7.9±1.9)	P< 0.001
Fetal weight	640-4410(2804.9±733.1)	686-5145(3067±710.9)	P < 0.001
Apgar1	0-9(7.9±2.1)	0-9 (7.9±2.1)	P < 0.749
Apgar5	0-10(9.3±1.9)	0-10(9.2±2.1)	P < 0.948

Table 1. Patients characteristics

	Primigravida 120	Grandmultipara 295	Odds ratio 95% cl	P value
<b>Delivery</b>				
C/S	38 (31.7%)	110 (37.3%)	0.779 (0.496–1.224)	P < 0.166
<b>Medical diseases</b>				
GDM	9 (7.5%)	65 (22.0%)	0.287 (0.138–0.597)	P < 0.001
HTN	16 (13.3%)	32 (10.9%)	1.264 (0.666–2.402)	P < 0.287
Anemia	4 (3.3%)	85 (28.8%)	0.085 (0.030–0.238)	P < 0.001
Other medical	3 (2.5%)	21 (7.1%)	0.335 (0.098–1.143)	P < 0.048
<b>Obstetrical complication</b>				
ROM	24 (20%)	19 (6.4%)	3.632 (1.905–6.923)	P < 0.001
IUGR	6 (5%)	4 (1.4%)	3.829 (1.061–13.820)	P < 0.038
Breech	10 (8.3%)	20 (6.8%)	1.250 (0.567–2.756)	P < 0.357
Preterm	18 (15%)	47 (15.9%)	0.931 (0.516–1.680)	P < 0.741
<b>Placental complication</b>				
Placenta previa	1 (0.8%)	9 (3.1%)	0.267 (0.033–2.131)	P < 0.164
Abruptio placenta	0 (0%)	7 (2.4%)	1.417 (1.331–1.508)	P < 0.090
Post partum hemorrhage	6 (5%)	46 (15.6%)	0.285 (0.118–0.686)	P < 0.001
<b>Neonatal outcome</b>				
NICU	16 (13.3%)	38 (12.9%)	1.040 (0.556 – 1.948)	<0.508
IUFD	2 (1.7%)	10 (3.4%)	0.483 (0.104 -2.238)	<0.276
NND	3 (2.5%)	6 (5%)	1.235 (0.304 -5.021)	<0.509

Table 2. Comparison between primigravida and grand multipara, C/S = cesarean section, GDM = gestational diabetes mellitus, HTN =hypertension, ROM = rupture of membrane, NICU = neonatal intensive care unit, IUFD = intrauterine fetal death, NND = neonatal death

multipara and statistically significant  $P < 0.001$ ,  $< 0.001$  and  $< 0.048$ . However, HTN is more common in primigravida but not statistically significant with P value  $< 0.287$ .

Regarding obstetrical complication, we look at premature rupture of membrane. Intrauterine growth retardation more common in primigravida and the difference was statistically significant with a P value  $< 0.001$  and  $< 0.038$  respectively. There was no difference in breech presentation and preterm labor.

Placenta previa, abruption placenta, and postpartum hemorrhage were more common in grand multipara but statistically significant in postpartum hemorrhage with a p-value  $< 0.001$ .

The neonatal outcome divided into neonatal ICU admission, intrauterine fetal death and neonatal death all were similar in each group and not statistically significant (Table 2).

Logistic regression performed of the different variable, age

less than 30 years, delivery by cesarean section, fetal weight less than 2500 gram, Apgar score at 1 and five less than 6, NICU admission, Diabetic, hypertensive, postpartum hemorrhage, anemia, PROM, IUGR, and premature birth. Factors that are statistically significant shown in Table 3.

#### 4. DISCUSSION

This study reflected the outcomes of grand multiparas women in comparison to primigravida in KAUH, Based on our study we conducted that the maternal age of grand multipara women is higher than primigravida, which is expected the result and found in most recent studies (4, 7).

However, out of 295 grand multiparas women in our study the mean age was  $36.9 \pm 4.6$  which indicates early age of marriage and parity, in another study they found that 20% of grand multiparas women were less than 35 years old (3)

In one of the study, they found that neonatal birth weight is significantly lower in grand multiparas with mean of  $3237 \pm 568$ g versus multiparas women (parity 2-4)  $3424 \pm 621$ g (8) and another study showed that low Apgar score was associated more with grand multiparity which contradicts what we found in our study (4).

There was no significant difference in cesarean delivery and pregnancy induced hypertension in both groups of our study which is supported by the previous study that was published in 2006 concluded that grand multiparity is not related with increased risk of adverse pregnancy outcomes such as cesarean section or pregnancy induced hypertension (9).

However previous studies that were done found that CS is significantly higher among grand multiparas women (10, 11). Although pregnancy induced hypertension wasn't highly significant studies showed that primigravida especially women in their 30s have higher risk of developing hypertension during pregnancy (12-14).

In our study we found that medical condition such as anemia, gestational diabetes and medical disease were highly significant which was supported with the previously published study that showed among the grand multiparas women 95% had anaemia and high incidence of gestational diabetes (15) regarding obstetrical complication.

Our data showed that premature rupture of membrane and intrauterine growth retardation were common among primigravida with significant statistical difference as it was showed in this study which among 100 pregnant with premature rupture of membrane 63 were primigravida (16).

In another study they found no significance in preterm birth in grand multiparas women in comparison to primigravida which support our finding in this current study (17). However, there were some studies that showed significance in preterm birth and breach presentation in grand multiparas women (18).

As regards for placental complication, antepartum and post-partum haemorrhage we concluded that placenta previa and abruption placenta were common in grand multiparity but not significant, in contrast, postpartum haemorrhage was common and highly significant in grand multiparas women these results go with what (19, 20).

On another hand a study they presented no significant differences in antepartum haemorrhage and reported high prevalence of placenta previa among grand multiparas

women (21).

As for the neonatal ICU admission, intrauterine fetal death and neonatal death we found no significance in our study and these findings were agreed by previous studies (4, 21).

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