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OBSTETRICAL COMPLICATION IN GRAND MULTI PARITY

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ABSTRACT

INTRODUCTION: *Grand multi parity has long been considered dangerous to both mother and fetus because of having more obstetrical complication including gestational diabetes, hypertension, anaemia, placental abruption, placenta previa, pre-term labour, malpresentation, malposition, fetopelvic disproportion, dysfunctional labour and uterine rupture.*
OBJECTIVES: *Objectives of my study to compare the obstetrical complication between grand multi parity and to low parity women and calculate the frequency of maternal and perinatal mortality associated with complication of grand multiparity.*
STUDY DESIGN: *It was cross- sectional comparative study.*
SETTING: *This study was conducted in Obstetric and Gynaecology Unit-I, Civil Hospital, Karachi and Sheikh Zaid Women Hospital Larkana.*
DURATION OF STUDY: *Duration of study was one year.*
SUBJECT AND METHODS: *A total 200 pregnant women were selected and were divided into two groups, group one comprising of grand multiparae (para > 5) and group two consisting of low parity (para 1-4). Age, socioeconomic status, booking status, parity of the women were recorded, antenatal intrapartum, and post-partum complication and mode of delivery were recorded, maternal and perinatal mortality were recorded in both groups.*
RESULTS: *According to result of study older age group of the study 36-40 years were higher in grandmultiparity.Anemia was significantly higher in grand multi parity than low parity group (p = 0.001) while abruptio placenta, PIH, and mal-presentation were significantly higher in grand multi parity than low parity group (p < 0.01). Placenta previa, preterm labour and twin pregnancy were insignificant between two groups. Intrapartum and postpartum complication found insignificant between two groups at (p < 0.05) proportion of women who underwent caesarean section was significantly in high parity group than low parity (p = 0.011). One maternal death was observed in grand multiparae and no maternal death was found in low parity was insignificant (p = 0.999), while perinatal mortality was observed in grand multiparae than low parity (16% vs 4%, p =0.999).*
CONCLUSION: *It is concluded that antenatal complication, like PIH, abruptio placenta, anemia, malpresentation and caesarean deliveries and perinatal mortality were more common in grand multiparae then the low parity group.*

KEYWORD: Grand multiparae, low parity, obstetrical complication.

INTRODUCTION

Grand multi parity is the condition of giving birth after the 28th weeks of gestation, following 5 or more previous viable babies. Grand multiparae is relation to obstetric performance is labeled high risk. High risk pregnancy is define as one in which the mother, fetus or newborn will be at increased risk of morbidity or mortality at or after birth. The risk to the mother and child is relatively high in first pregnancy and then this risk decline during second, third and then slowly rises with increasing parity by the sixth pregnancy risks exceeds these of 1st and after that rises steeply with each pregnancy[1.] Grand multiparous have been considered to be at higher risk of developing antenatal complications. These complications include gestational diabetes, hypertension, anemia, placental abruption, placenta previa, preterm labour, mal-presentation, mal-position, fetopelvic disproportion and intra-partum complication, uterine intertia, dysfunctional labour, uterine rupture, intrauterine death, marosomia and subsequent operative delivery

with its consequent risk of maternal mortality and morbidity[2,3.] Postpartum haemorrhage also more common in grand multipara. Munim noted in her study PPH was three times more common in grand multipara4. Grand multiparity reported to increased both maternal and perinatal morbidity and mortality[5,6.]

It is generally accepted that GMP is risk factor of obstetric complication but recently a few reports have appeared in the literature showing that this might be fiction rather than fact. Toohey et al, Fayed et al, and Kaplan et al, addressed the obstetric performance of great grand multipara but they concoluded that such women were not a high risk group[7,8,9]. Brunner et al, in 1992 concluded that grand multi parity should be regarded as an obstetric risk factor, mainly because of the higher frequency of placental complication and with good obstetric care there should be no advice affects to the mother or newborn[10.]

The incidence of grand multipara has decreased in most western countries in recent years due to better socioeconomic status and high use of contraception[11,12,13.] In third world countries like Pakistan the large families are still common. Grand multi parity is a common problem in this part of world and when added to low socioeconomic status, it significantly increases the risk to mother and fetus[8,14,15.]

OBJECTIVES

The objective of our study were

1) To compare obstetrical complications between grand multiparae and low parity women.

2) To study the frequency of maternal and perinatal mortality associated with complications of grand multi parity.

OPERATIONAL DEFINITION

GRAND MULTIPARAE:

Grand multiparae is woman who has delivered five or more babies after 28 weeks, weighing more than 500 grams.

LOW MULTIPARAE:

Low multiparae is woman who has delivered less than five (para 1-4).

HYPOTHESIS:

Obstetrical complication are more in grand multiparae than the low parity women.

MATERIAL AND METHODS

SETTINGS:

This study was conducted in Obstetric / Gynaecology Unit-I, Civil Hospital, Karachi and Sheikh Zaid Women Hospital Larkana.

Table 1: AGE DISTRIBUTION

(n = 200)

Age (years)	Group		Total
	Low parity (n = 100)	High parity (n = 100)	
20 – 25	46*	30	76
26 – 30	40	29	64
31 – 35	10	26	36
36 – 40	4	15*	19

* Shows significant difference (X^2 = 18.6, d.f = 3, p = 0.001)
Low parity: Parity 2-4, High parity: Parity > 4

Table 2: COMPARISON OF BOOKING STATUS

(n = 100)

Booking	Group		Total
	Low parity (n = 100)	High parity (n = 100)	
Booked	32	23	55
Unbooked	62	69	131
Referred	6	8	14

* Significant difference (X^2 = 2.13, d.f = 2, p = 0.344)
Key: Booked = 3 or more antenatal visits.
Unbooked = < 3 or no antenatal visits.

Table 3: COMPARISON OF PREGNANCY RELATED COMPLICATIONS BETWEEN TWO GROUPS

(n = 100)

Complications	Group		p-value
	Low parity (n = 100)	High parity (n = 100)	
Anemia	62	89	0.001
Placentae Previa	5	7	0.55
Abruptio placentae	2	11*	0.018
Preterm labour	5	6	0.760
Pregnancy induced hypertension	4	14*	0.024
Malpresentation	2	15*	0.001
Twin pregnancy	2	4	0.68

* Shows statistically significant difference at p < 0.05.

Duration of Study:

One year from 1st July 2008 to 31st March 2009 at Civil Hospital Karachi and 1st April 2009 to 30th June 2009 at Sheikh Zaid Women Hospital Larkana.

Sample Size:

A total of 200 pregnant women were selected randomly, were divided into two groups with 100 women in each group. Group I consistent of women with parity five or more, and group II consisting of women with parity one to four.

Sampling Technique:

Probability.

Sample Selection:

Sample selection was done according to the following inclusion and exclusion.

Inclusion Criteria:

All pregnant multiparous women.

Exclusion Criteria:

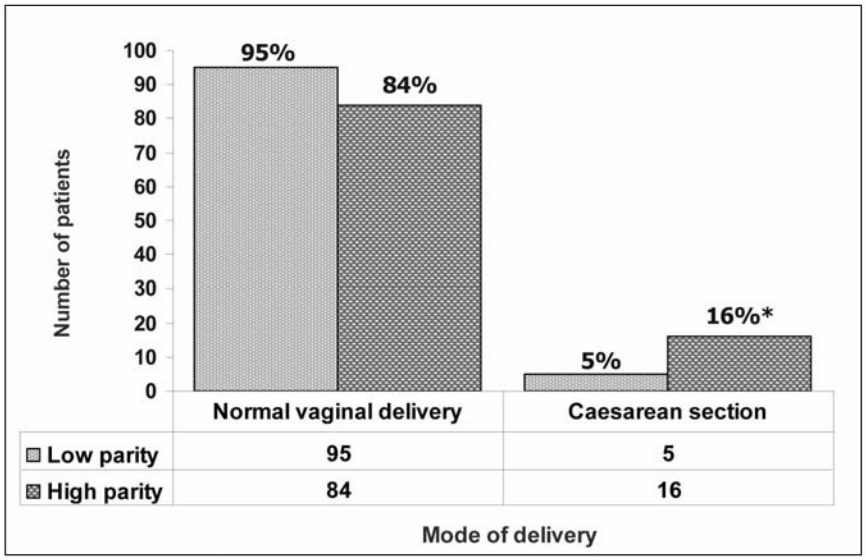
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Study Design:
Comparative, cross sectional

Data Collection Procedure:
A 200 women were admitted in our ward through out patient department or emergency, or referred by private clinics or traditional birth attendants were selected.
These cases were divided into two groups. Group I consistent of 100 women of parity five or more and group II consistent of 100 women were admitted during the same period with parity one to four.
On admission patients history was taken in detail. Age, parity, socioeconomic status, detailed obstetrical history, past history were recorded and previous record was received to detect antenatal complication including anaemia, PIH, APH, and malpresentation , pre-term labour. Anemia was taken as haemoglobin of 11 g/dl, PIH was defined as blood pressure of > 140/90 millimeter mercury after 20 weeks of gestation with or without protenuria on two or more occasion 6 hours apart. Bleeding from genital tract after 24 weeks gestation was taken as APH. Ultrasonography was done in non-booked cases when there was suspicious of malpresentation which was defined as presenting part of fetus in other than cephalic in relation to maternal pelvis. Preterm labour was defined as labour before 37 complete weeks gestation.
During labour patients were managed according to units protocol and partogram recording was used to evaluate the progress of labour. The intrapartum complications included prolonged labour and ruptured uterus.
Mode of delivery was also recorded. After delivery, the patients were monitor for 24 hours for primary PPH which was taken as blood loss estimated to be more than 500ml after normal vaginal delivery and 1000ml after caesarean section. The maternal death if any was recorded with its cause in detail.
Neonates were followed for neonatal complication which included, LBW, macrosomia, perinatal death. Birth weight of < 2.5 kg was taken as LBW and > 4.2 was taken as macrosomic babies. Admission to NICU. Perinatal deaths (PND) included all intrauterine death (IUD) and early neonatal deaths (ENNDs). Data was collected through special proforma, neonatal follow up recorded was also entered in the same proforma.

Statistical Analysis:
Data analysis was performed through SPSS version-10.0.
Frequencies and percentages were computed for presentation of all categorical variables of the study including age, booking status, mode of delivery, pregnancy related complications, intrapartum and postpartum complications, maternal and fetal mortality, and birth weight. Chi-square test was applied to compare age, booking status, mode of delivery, pregnancy related complications, intrapartum and postpartum complications and birth weight between low parity and high parity groups. Fisher's exact test was applied to compare maternal and fetal mortality and nursery care admissions between low parity and high parity groups due to typically low expected count (< 5). Statistical significance was taken at p < 0.05.

Figure-1: COMPARISON OF MODE OF DELIVERY BETWEEN TWO GROUPS



* Significant difference (X^2 = 6.44, d.f = 1, p = 0.011)

Table 4: COMPARISON OF INTRAPARTUM AND POSTPARTUM COMPLICATIONS BETWEEN TWO GROUPS

Complications	Group		p-value
	Low parity (n = 100)	High parity (n = 100)	
Obstructed labour	3	4	0.70
Ruptured uterus	1	1	—
Retained placentae	0	2	0.50
Postpartum hemorrhage	2	4	0.68

* Shows statistically significant difference at p < 0.05
Low parity: Parity 2-4
High party: Parity > 4

RESULTS
Commonest age group in both study groups was 20 - 25 years in which total 76 patients were observed, however this age group was significantly higher (46% vs. 30%, p=0.001) in low parity group that high parity group while older age group of the study 36 - 40 years was higher in high parity group than low parity group (4% vs. 15%). So the age distribution was significantly different in two groups (Table-1).
Most of the patients in this study were unbooked, i.e. 131 % (Table-2). Booking status between two groups was statistically insignificant (p=0.344).
Anemia was significantly higher in high parity group than low parity group (89% vs. 62%, P = 0.001); while abruptio placentae, PIH and malpresentations were significantly higher in high parity group than low parity group (p < 0.01). Placentae previa, preterm labour and twin pregnancy were insignificant between two groups (Table-3).

Out of 200 women in this study, 21 (10.5%) underwent caesarean section and 179 (89.5%) normal vaginally delivered (Figure-1). In high parity group, proportion of women who underwent caesarean section was significantly higher in high parity group than low parity group (16% vs. 5%, p=0.011).

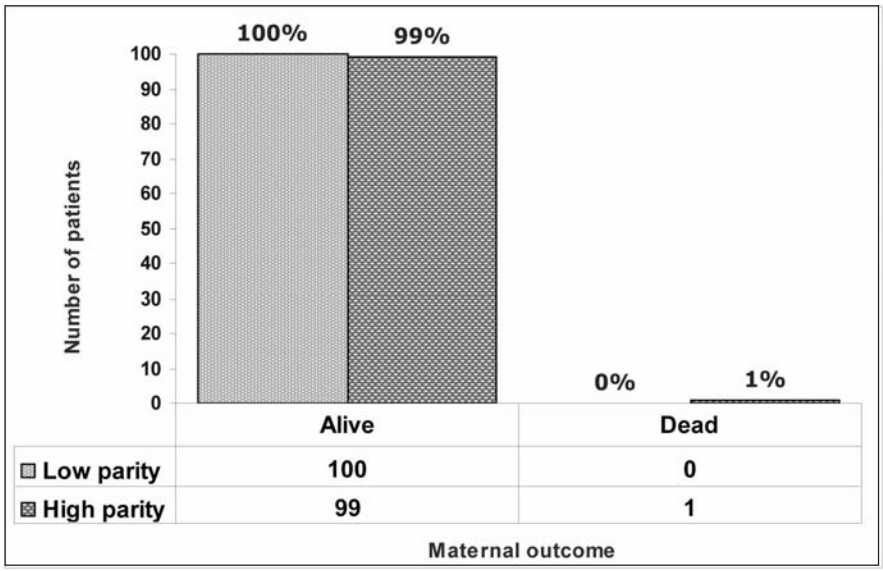
Intrapartum and postpartum complications found insignificant between two groups at $p < 0.05$ (Table-4).

No maternal death was observed in low parity group but one (1%) maternal mortality was observed in high parity group, however difference of maternal mortality rate was insignificant (p = 0.999) between two groups (Figure-2).

Significantly high number of fetal mortalities was observed in high parity group than low parity group (16% vs. 4%, P = 0.999) (Figure-3).

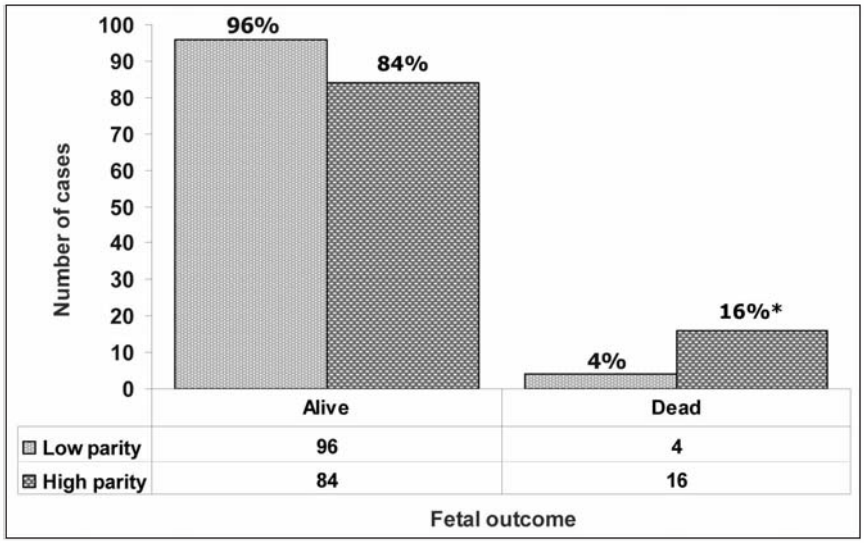
We observed 8% NICU admissions in high parity group that was not statistically significant (p 0.213) as compared with 3% NICU admissions in low parity group (Figure-4).

Figure-2: COMPARISON OF MATERNAL OUTCOME BETWEEN TWO GROUPS



* Significant difference (p = 0.999)

Figure-3: COMPARISON OF FETAL OUTCOME BETWEEN TWO GROUPS



* Significant difference (Fisher's exact test, p = 0.005)

DISCUSSION

This comparative, cohort study was conducted in largest hospital of Karachi to find out whether grand multi parity is risk factor for obstetrical complication when compare to low parity. Despite of availability of modern obstetric facilities, women in our society not intend to get book for antenatal care because they are too busy at their home and lack of awareness about health care, We found in our study that most of the patients in both groups coming in Civil Hospital, Karachi were non-booked and referred from different areas with complications. Unbooked 13% and 14% referred from different areas. In our study the grand multipara were older then low parity women. Increased age of GMP women put them additional risk for complication. As our study was not age matched study. So, the age matched study should be done for the proper risk assessment. This study shows that antenatal complication such as anemia was more common in grand multiparae. A Salick, et all also found same result in their studies [16]. Anemia is more common in grand multipare because of poor nutrition, repeated pregnancies, low socioeconomic status. Pregnancy induced hypertension (PIH) was more common in our study, these women were relatively older than low parity and my study was not age matched study. Munim S, et al., found in her study statistically significance difference in the induced of the PIH that was 15.4% in grand multipare compared to the 9.3% in low parity women [4]. Although the patients in here study were booked patients, she reported that higher prevalence of these complications may be explained on the increased age of these women. In spite of increased incidence of PIH the superimposed pre-eclampsia and eclampsia was no more common in my study.[4.] Regarding the antepartum haemorrhage, abruptio placentae is more common in GMP. Although number of placenta previa was increased in grand multi parity than low parity but not statistically significant.

Heija AA, also found in his study that abruptio placentae is more common in grand multipareae. He state that the high parity is significant etiological determinant of placental abruption [2].

The malpresentation was more common in grand multipare especially breech was more common than the low parity. Malpresentation in grand multipara is common because increasing laxity of anterior abdominal wall musculature, failing to act as a brace to encourages and maintain a

longitudinal lie, encourages malpresentation [17].

Preterm labour was same in both groups. Aziz FA, studied the grand multipare Sudanese women and found the incidence of pre-term labour was increased in these women [18].

The intra partum complication like obstructed labour result was same in both groups in both cases patients was referred and reason was abnormal fetal position. we found 1 case of Ruptured uterus in each group, both these are patient were referred from private hospital, both were older age, both were mismanaged with syntocynon but low parity woman was survive and grand multiparous woman was die.

Our study showed no statistical difference in postpartum haemorrhage between both groups. Page L in her series of study has reported that same result. She found no direct association between grand multiparae and PPH.[63] Some other studies have shown that increased risk of PPH is associated with increased age not with increasing parity. Munim et al, noted in her study PPH was three times more common in grand multiparae [4].

Our study showed caesarean section is significantly increased in grand multipare than the low parity, this because of malpresentation and obstructed labour, antepartum haemorrhage.

One maternal death found in my study this unfortunate woman belong to low socioeconomic class, had obstructed labor due to macrosomic baby and mismanaged with syntocinon referred in state of shock despite of emergency laparotomy, blood transfusion, and resuscitation she could not survive because she was already anemic had bleed a lot and die due to cardiac failure.

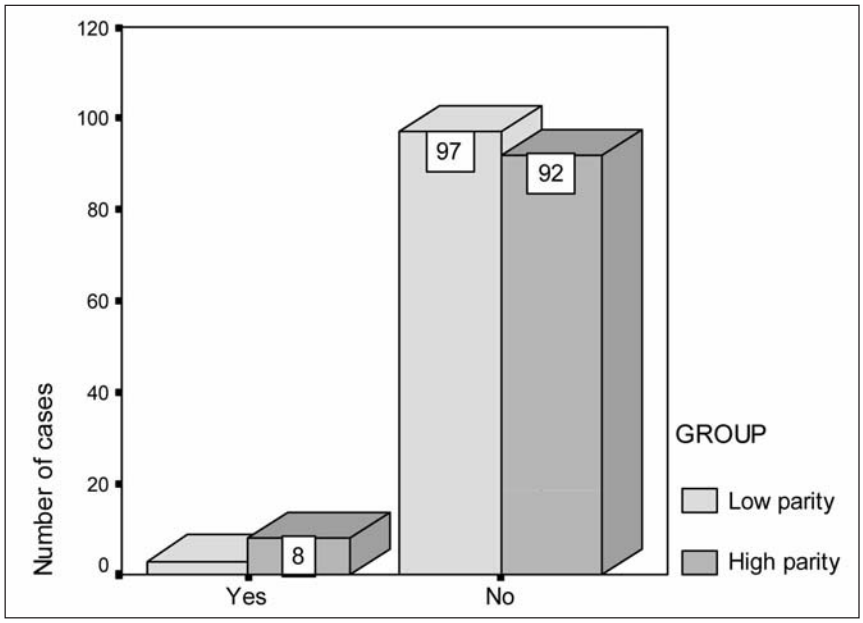
As regard the neonatal outcome parity is considered as important factor in determining the birth weight of baby. Many investigators have reported association of LBW with grand multiparae.

But in my study low birth weight was common in low parity as compare to grand multiparae. There was no significant increased incidence macrosomic babies in grand multiparae, compare with international literature.

In our study perinatal mortality was significantly increased in grand multi parity it mainly because of abruptio placenta, PIH, obstructed labour and preterm birth.

Figure-4: COMPARISON OF NURSERY ADMISSION BETWEEN TWO GROUPS

(n_1 = n_2 = 100)



N ICU admission

* Significant difference (Fisher's exact test, p = 0.213).
Low parity: Parity 2-4
High parity: Parity > 4
NICU = Neonatal intensive care unit

CONCLUSION

It is concluded from my study that antenatal complications like pregnancy induced hypertension, abruptio placenta, anaemia, malpresentation, Caesarean deliveries and perinatal mortality were more common in grand multiparae then the low parity group and multi parity is still a major obstetric hazards in our set up with higher incidence of complications.

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