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Research Article

**A STUDY ON RELATION OF MATERNAL OBESITY ON
MODE OF DELIVERY IN FEMALE POPULATION OF
PAKISTAN**Noor ul Aein Arshad¹, Iqra Khan¹, Faryal Jamil¹¹Sheikh Zayed Medical College Raheem Yar Khan**Abstract:**

Introduction: Obesity is a growing public health hazard worldwide. The proportion of global adult women with overweight increased from 29.8% (29.3–30.2%) in 1980 to 38.0% (37.5–38.5%) in 2013, and the increasing trend was observed in both high income and middle income countries. **Objectives of the study:** The main objective of the study is to find the effect of maternal obesity on mode of delivery and in local female population of Pakistan. **Material and methods:** This cross sectional study was conducted at Sheikh Zayed Medical College Raheem Yar Khan during 2018 to 2019. The data was collected from 100 female patients who visited the OPD of hospital regularly and then proceed to delivery in the same hospital. The demographic variables that we assessed were; age, race, height and weight, smoking status, gestation at delivery, delivery outcome including onset of delivery, mode of delivery, reason for delivery mode, labour length (first, second and third stages), estimated blood loss, second and third degree tears and episiotomy. **Results:** The data were collected from 100 female patients. The mean age was 25±5.65 years. According to the pre-pregnancy BMI, 56 women (11.5%) were underweight, 8 (67.1%) were of normal weight, 14 (16.1%) were overweight and 22 (5.3%) were obese (Table 1). The level of glycated hemoglobin was significantly higher in the overweight and obese groups than in normal weight and underweight groups ($P < 0.05$). In addition, birth weight was significantly higher in overweight or obese women than in underweight women ($P < 0.05$). **Conclusion:** It is concluded that great increase of the number of overweight and obese pregnant women in both high income and middle income countries. High early pregnancy BMI is associated with poor maternal, perinatal, and neonatal outcomes in Pakistan.

Corresponding author:

Noor ul Aein Arshad,

Sheikh Zayed Medical College Raheem Yar Khan

QR code



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INTRODUCTION:

Obesity is a growing public health hazard worldwide. The proportion of global adult women with overweight increased from 29.8% (29.3–30.2%) in 1980 to 38.0% (37.5–38.5%) in 2013, and the increasing trend was observed in both high income and middle income countries. Among pregnant women, increased body mass index (BMI) was associated with numerous pregnancy related complications, including gestational diabetes mellitus (GDM), pregnancy hypertension and preeclampsia. Women with overweight or obesity involved a relatively high risk of severe maternal morbidity and mortality¹. Previous experts reported odds ratio (OR) for severe maternal morbidity of 1.1 for women with obesity class 1 (BMI 30.0–34.9) compared with women with normal weight. Obesity has been designated as one of the most important global health threats worldwide, and its prevalence has been increasing among women of reproductive age². Pregnant ladies constitute a critical subpopulation with a hoisted danger of obesity because of over the top weight pick up. It has been demonstrated that maternal obesity and inordinate gestational weight pick up (GWG) are related with unfriendly obstetric and neonatal results including unconstrained fetus removal, gestational diabetes mellitus (GDM), cesarean conveyance, preeclampsia, neonatal macrosomia, and agent and soporific entanglements³.

To help ideal pregnancy results, the World Health Organization (WHO) prescribed that the Institute of Medicine (IOM) create rules for weight pick up amid pregnancy. In any case, the IOM suggestions on gestational weight pick up depend on pre-pregnancy BMI without mulling over various race/ethnicity, age, or existing pregnancy inconveniences⁴. Ladies with GDM are at expanded danger of maternal and fetal intricacies including preeclampsia, preterm birth, cesarean segment and conveyance of huge for gestational age (LGA) newborn children⁵. As obesity and GDM are much of the time comorbid conditions, obesity and over the top gestational weight pick up may intensify these dangers in GDM. Since fat is an endocrine organ and collaborates with diabetes, it is conceivable that the expanded amassing of fat

differentially affects perinatal results for ladies with GDM⁶.

Objectives of the study

The main objective of the study is to find the effect of maternal obesity on mode of delivery and in local female population of Pakistan.

MATERIAL AND METHODS:

This cross sectional study was conducted at Sheikh Zayed Medical College Raheem Yar Khan during 2018 to 2019. The data was collected from 100 female patients who visited the OPD of hospital regularly and then proceed to delivery in the same hospital. The demographic variables that we assessed were; age, race, height and weight, smoking status, gestation at delivery, delivery outcome including onset of delivery, mode of delivery, reason for delivery mode, labour length (first, second and third stages), estimated blood loss, second and third degree tears and episiotomy. Neonatal characteristics included sex, birthweight, cord blood pH and the incidence of shoulder dystocia and stillbirth. Maternal BMI was calculated based upon maternal height and weight measurements provided during pregnancy booking between gestational weeks 10 and 12.

Statistical analysis

Two-way ANOVA was performed to study the contributions. A chi-square test was used to examine the difference in the distribution of the fracture modes (SPSS 19.0 for Windows, SPSS Inc., USA).

RESULTS:

The data were collected from 100 female patients. The mean age was 25±5.65 years. According to the pre-pregnancy BMI, 56 women (11.5%) were underweight, 8 (67.1%) were of normal weight, 14 (16.1%) were overweight and 22 (5.3%) were obese (Table 1). The level of glycated hemoglobin was significantly higher in the overweight and obese groups than in normal weight and underweight groups ($P < 0.05$). In addition, birth weight was significantly higher in overweight or obese women than in underweight women ($P < 0.05$). There were no significant differences between the four pre-pregnancy BMI categories in maternal age, parity, height and gestational weeks.

Table 01: Mode of labour onset for deliveries according to maternal BMI category

BMI group	Mode of labour onset			
	Spontaneous	Elective caesarean section	Emergency caesarean section	Induction
Underweight (%)	69.0	4.7	2.1	24.2
Normal (%)	64.1	7.4	2.4	26.2
Overweight (%)	56.9	10.1	2.5	30.5
Obese (%)	50.5	11.7	3.4	34.4
Very obese (%)	43.7	13.3	3.0	40.0
Morbidly obese (%)	35.5	16.7	4.1	43.6
Overall (%)	59.6	8.8	2.5	29.1

DISCUSSION:

This is in accordance with the findings of several larger studies. A review by Wispelwey *et al.* summarized the main risk modulators of caesarean delivery in obese women, including difficulty in initiation of labour and increased induction rate⁷. Since our study only describes women who initiated active labour, and we adjusted for medical induction in statistical analyses it seems likely that there is an independent effect of obesity on the risk of caesarean delivery⁸.

We found that obese women were granted fewer hours of active labour before a caesarean was performed compared with women of normal weight⁹. This could be explained by a possible earlier onset of labour complications within the obese population. However, since there was no difference in the numbers within the different levels of emergency caesareans, this seems unlikely. Alternatively, an increased consciousness amongst healthcare staff concerning the issue of maternal obesity may have had an indirect influence on treatment. A more cautious approach to managing these women might have been unknowingly adopted, resulting in an earlier decision to perform a caesarean delivery⁹.

CONCLUSION:

It is concluded that great increase of the number of overweight and obese pregnant women in both high income and middle income countries. High early pregnancy BMI is associated with poor maternal, perinatal, and neonatal outcomes in Pakistan.

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