

Prevalence of Obesity in Pregnancy and Its Association with Adverse Fetomaternal Outcomes in a Tertiary Care Center¹Korina Chopra, Senior Resident, Dr. S. N. Medical College, Jodhpur²Rekha Jhakar, Senior Professor, Dr. S. N. Medical College, Jodhpur³Vimla Choudhary, Associate Professor, Dr. S. N. Medical College, Jodhpur⁴Ankita Choudhary, Assistant Professor, Dr. S. N. Medical College, Jodhpur⁵Laxmi Poonia, Assistant Professor, Dr. S. N. Medical College, Jodhpur**Corresponding Author:** Korina Chopra, Senior Resident, Dr. S. N. Medical College, Jodhpur**How to citation this article:** Korina Chopra, Rekha Jhakar, Vimla Choudhary, Ankita Choudhary, Laxmi Poonia, “Prevalence of Obesity in Pregnancy and Its Association with Adverse Fetomaternal Outcomes in a Tertiary Care Center”, IJMACR– September– 2026, Volume – 9, Issue – 5, P. No. 966 – 971.**Open Access Article:** © 2026 Korina Chopra, et al. This is an open access journal and article distributed under the terms of the creative common’s attribution license (<http://creativecommons.org/licenses/by/4.0>). Which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.**Type of Publication:** Original Research Article**Conflicts of Interest:** Nil**Abstract****Objective:** Obesity seems to be a major health concern with increasing prevalence among women of reproductive age group. This study aims at studying the fetomaternal outcome of women with obesity. This can support effective preconception counseling for women with obesity and enable clinicians to anticipate and better manage potential adverse outcomes.**Material and method:** This is a prospective observational study conducted at Mathuradas Mathur hospital. 150 patients (Group1) admitted in labour room of Mathuradas Mathur hospital with prepregnant BMI in obese category and with term pregnancy were studied for the presence of risk factors and perinatal outcome. These were compared with 150 patients (Group2) with prepregnant BMI in normal category.**Results:** It was found that the prevalence of gestational diabetes and pre-eclampsia were higher in obese group than in patients belonging to non-obese group. Patients in obese category also had increased incidence of PPH and many of them developed wound infection. Many of the infants of mothers belonging to the obese category required NICU admission.**Conclusion:** Obesity is significant health concern and has been on a rise since the last few decades. It is important to council patients regarding the importance of achieving normal BMI before conception, to prevent various adverse fetomaternal complications.**Keywords:** Obesity, fetomaternal outcome, Gestational Diabetes, Pre-eclampsia, BMI, PPH, NICU admission.

Introduction

Obesity has emerged as a major global public health concern, with its prevalence increasing rapidly among women of reproductive age. Recent evidence highlights that obesity during pregnancy contributes to complex metabolic, inflammatory, and hormonal alterations that adversely influence both maternal and fetal health^{1,2}.

The prevalence of obesity in pregnancy has risen substantially in recent years due to sedentary lifestyles, unhealthy dietary patterns, and urbanization. Contemporary global data indicate that a significant proportion of pregnant women are either overweight or obese, with studies reporting that nearly one-fifth to one-quarter of women enter pregnancy with obesity³.

Maternal obesity is strongly associated with adverse maternal outcomes such as gestational diabetes mellitus, hypertensive disorders including preeclampsia, increased rates of cesarean delivery, and postpartum complications. From the fetal perspective, maternal obesity is linked to increased risks of macrosomia, large-for-gestational-age infants, preterm birth, and neonatal complications⁴. Evidence also suggests that the coexistence of obesity with gestational diabetes further amplifies the risk of adverse neonatal outcomes⁴.

Therefore, this study aims to determine the prevalence of obesity among pregnant women and to assess its association with adverse fetomaternal outcomes in a tertiary care center.

Aim

To determine the prevalence of obesity among pregnant women and to evaluate its impact on maternal and fetal outcomes.

Objectives

1. To estimate the prevalence of obesity among pregnant women attending antenatal care.

2. To assess the association between **maternal obesity** and **maternal (fetomaternal) complications**, such as:

- Gestational hypertension
- Preeclampsia
- Gestational diabetes mellitus (GDM)
- Prolonged labour
- Increased rate of cesarean delivery
- PPH

3. To evaluate the effect of maternal obesity on fetal and neonatal outcomes, including:

- Macrosomia (large birth weight)
- Preterm birth

Materials and methods

Study design and setting: This was a prospective observational study conducted at a tertiary centre at Mathuradas Mathur Hospital from February 2026 to May 2026.

Participants: Patients admitted in the Labour Room of Mathuradas Mathur Hospital belonging to the Obese category according to WHO BMI classification.

Inclusion Criteria

- Pregnant women aged 20–45 years
- Singleton pregnancy
- Women in third trimester at admission or delivery
- Women who gave informed consent

Exclusion Criteria

- Multiple pregnancies
- Pre-existing chronic illnesses affecting pregnancy (e.g., cardiac, renal, or endocrine disorders other than obesity)
- Refusal to participate

Variables and data measurements: 150 patients (Group1) admitted in labour room of Mathuradas Mathur hospital with prepregnant BMI in obese category

and with term pregnancy were studied for the presence of risk factors and perinatal outcome. These were compared with 150 patients (Group 2) with prepregnant BMI in normal category.

Statistical Analysis

Data were entered into statistical software SPSS version X.

Comparative analysis: Categorical outcomes between obese and non-obese women were compared using Chi-square test or Fisher's exact test (for small counts).

Significance level: $p < 0.05$ considered statistically significant.

Results and Discussions

Profile of study subjects-

Table 1: Age

Age (in years)	Group 1	Group 2
20-24	6(4%)	27(18%)
25-30	48(32%)	96(64%)
30-35	87(58%)	22(14.6%)
>35	9(6%)	5(3.3%)
Total	150	150
Mean age group	30.78 $\pm$ 3.79 years	27.58 $\pm$ 3.92 years

In my study most of the obese patients (58%) studied belonged to 30-35year age group category while the maximum patients in group 2 belonged to 25-30 years category. Similar finding was seen in the study conducted by Faryal Rehman et.al.⁵.

Table 2: Gravida

Gravida	Group 1	Group 2
Primi	54(36%)	69(46%)
Multi	96(64%)	81(54%)
Total	150	150

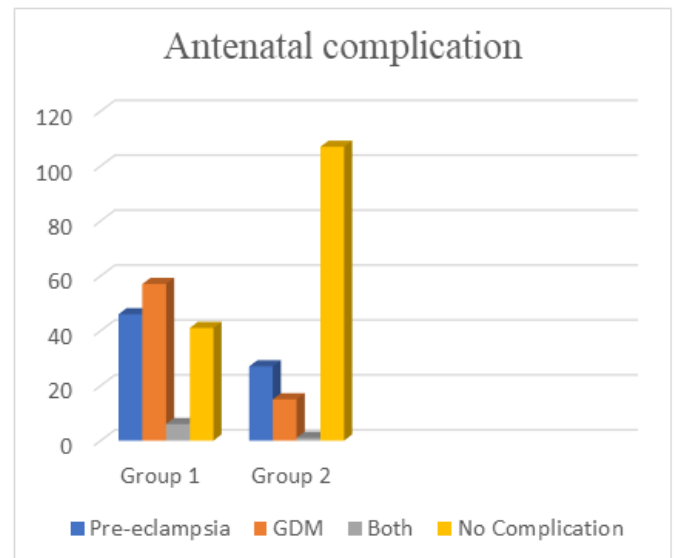
In my study maximum patients belonging to the Group 1 were multigravida (64%).

Table 3: Antenatal Complications

Complication	Group 1	Group 2	Total	p-value
Pre-eclampsia	46(30.7%)	27(18.0%)	73	<0.01
Gestational Diabetes	57(38.0%)	15(10.0%)	72	< 0.00001
Both	6(4.0%)	1(0.7%)	7	$\approx$ 0.12
No complication	41(27.3%)	107(71.3%)	148	< 0.0000001
Total	150	150	300	

Chi-square test applied

Figure 1: Antenatal complications



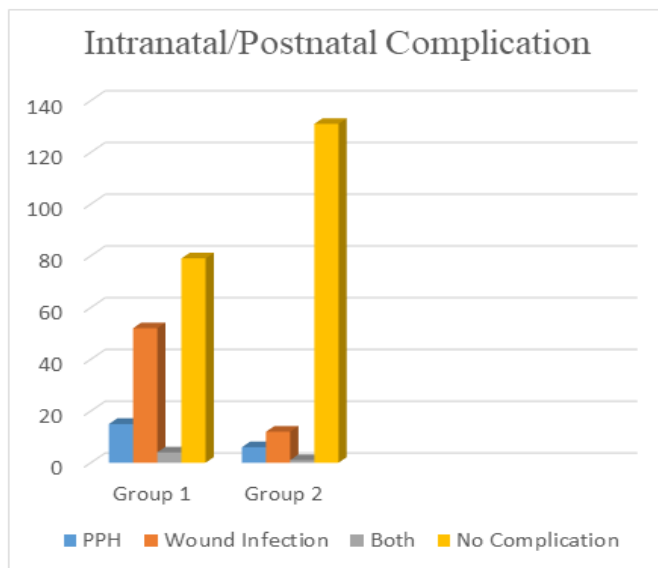
Antenatal complications like GDM and pre-eclampsia were studied in both groups. It was found that of the 150 patients belonging to Group 1 46(30.7%) patients developed pre-eclampsia and 57 patients (38%) developed GDM. Similar findings were seen in the study conducted by Jenniferbritto John et.al⁶. When comparing the two groups the result was found to be significant with p value <0.01 and <0.00001 were respectively for both complications. While a significant number of patients belonging to Group 2 had pre-eclampsia and GDM, maximum patients belonging to this group had uneventful pregnancy with neither of the above complications.

Table 4: Intranatal/Postnatal-Complications

Complication	Group 1	Group 2	Total	p-value
PPH	15(10.0%)	6(4.0%)	21	≈ 0.042
Wound Infection	52(34.7%)	12(8.0%)	64	< 0.00001
Both	4(2.7%)	1(0.7%)	5	≈ 0.37
No complication	79(52.7%)	131(87.3%)	210	< 0.000001
Total	150	150	300	

Chi-square test applied; $p < 0.0001$, statistically highly significant

Figure 2: Intranatal and postnatal complications



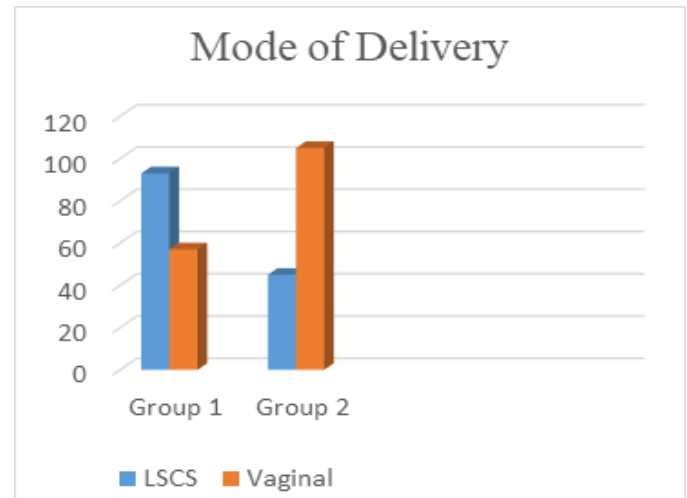
Considering the intranatal and postnatal complications 15(10%) and 52(34.7%) patients belonging to Group 1 had PPH and wound infections while a significantly lower number of patients from group 2 had developed these complications. These finding were similar to those found in the study conducted by Dr Sumaira Pervaiz⁷ and Yuping Hu MM et.al.⁸

Table 5: Mode of Delivery

Mode of Delivery	Group 1	Group 2	p-value
LSCS	93(62%)	60(40%)	
Normal Delivery	57(38%)	90(60%)	
Total	150	150	< 0.0001

Chi-square test applied

Figure 3: Mode of Delivery



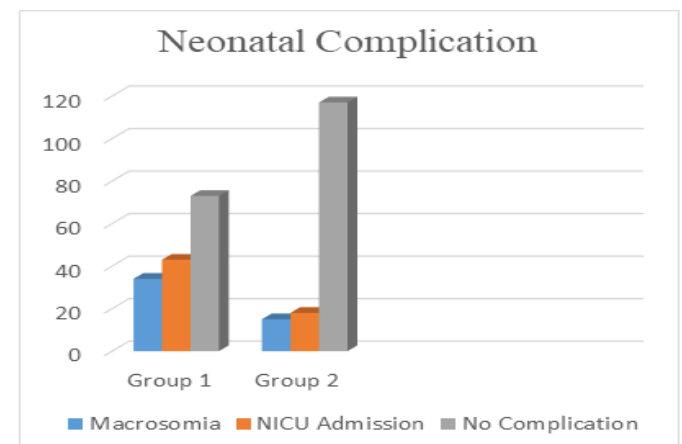
In our study significant number of patients (62%) belonging to Group 1 had to undergo LSCS due to abnormal labour. Similar finding was found in the study conducted by Jenny Bjorklund et.al.⁹

Table 6: Neonatal outcome

Complication	Group 1	Group 2	p-value
Macrosomia	34(22.6%)	15(10%)	≈ 0.003
NICU admission	43(28.6%)	18(12%)	≈ 0.0003
No Complication	73(48.6%)	117(78%)	< 0.00001
Total	150	150	

Chi-square test applied

Figure 4: Neonatal outcome



In my study a total of 43 neonates (28.6%) required NICU admission compared to only 18(12%) neonates requiring NICU admission in patients belonging to Group 2. A total of 34 neonates were macrosomic in group 1 patients compared to only 15 patients in group 2. Similar findings were seen in the study conducted by Kirsten Nealet.al.¹⁰

NICU admission was defined as any transfer of the neonate to the neonatal intensive care unit for monitoring or intervention beyond routine newborn care.

Conclusion

Increasing prevalence of obesity has become a significant health concern and is associated with significant implications on the health of mother and fetus.

Obese women are at higher risk of developing complications like gestational hypertension, pre-eclampsia and gestational diabetes. The course of labour is also sometimes abnormal resulting from abnormal uterine contractions and can often result in failed trial of labour. This leads to increase incidence of caesarean sections. Due to abnormal uterine contraction, there is increased prevalence of PPH. There is also increased incidence of NICU admission mainly due to hypoglycemia in neonates.

Since obesity is linked with a higher risk of fetomaternal complications, women should receive preconception counseling about its potential effects and be encouraged to achieve a normal BMI through weight reduction before becoming pregnant.

Overall, the study underscores the importance of early identification and management of obesity in women of reproductive age. Preconception counseling, appropriate antenatal care, nutritional guidance, and lifestyle modifications are essential strategies to reduce

associated risks. A multidisciplinary approach involving obstetricians, nutritionists, and healthcare providers is crucial to improving both maternal and fetal outcomes.

References

1. Mukhtar F. A systematic review of the management of maternal obesity in pregnancy: antenatal management, outcomes, and long-term implications. *Cureus*. 2025;17(7): e87258.
2. Agrawal R, Lathia T. Obesity during pregnancy: contemporary evidence and clinical implications. *Curr Opin Endocrinol Diabetes Obes*. 2025;32(6):286–295.
3. Systematic review (BMJ). Gestational weight gain and risk of adverse maternal and neonatal outcomes. *BMJ*. 2025;391: e085710.
4. Weir TL, et al. Effects of maternal obesity on neonatal outcomes in women with gestational diabetes: systematic review and meta-analysis. *Obes Rev*. 2024;25(7): e13747.
5. Rehman F, Asmat S, Mehsud N, et al. (October 11, 2025) Effects of Obesity on Pregnancy and Fetomaternal Outcome.
6. John J, Mahendran M. Maternal and fetal outcomes of obese pregnant women: a prospective cohort study. *Int J Reprod Contracept Obstet Gynecol* 2017; 6:725-9.
7. Dr Sumaira Pervaiz, Dr Sadyia Gul, Samina Firdous, Dr Bushra Nabi, Dr Munawar Ali Shah, & Dr Hina Ayub. (2026). Incidence of severe postpartum hemorrhage in obese women following delivery. *Journal of Population Therapeutics and Clinical Pharmacology*, 33(2), 225-231.
8. Yuping Hu, Fei Wang, The association of gestational diabetes in wound complications following cesarean

section: A meta-analysis, Current Problems in Surgery, Volume 71, 2025, 101867, ISSN 0011-3840

9. Bjorklund J, Wiberg-Itzel E, Wallstrom T. Is there an increased risk of cesarean section in obese women after induction of labor? A retrospective cohort study. PLoS One. 2022 Feb 25;17(2):e0263685
10. Neal K, Ullah S and Glastras SJ (2022) Obesity Class Impacts Adverse Maternal and Neonatal Outcomes Independent of Diabetes. Front. Endocrinol. 13:832678.