

National maternal morbidity and neonatal outcomes in pregnancies complicated by superobesity

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Women with superobesity are at higher risk of maternal morbidity, poor neonatal outcomes and preterm delivery.

OBJECTIVES

- Superobesity (pre-pregnancy BMI ≥ 50 kg/m²) is increasingly prevalent in the United States.
- Maternal morbidity and perinatal outcome data on superobesity is limited.
- This study sought to determine whether superobesity is associated with adverse maternal and neonatal outcomes.

METHODS

- The 2016-2018 National Vital Statistics System Birth Data was queried for delivery hospitalizations 20 to 44 weeks gestation linked to patients with superobesity.
- The primary maternal outcome was a peripartum morbidity composite of unplanned hysterectomy, ICU admission, transfusion, eclampsia.
- Risk of poor neonatal outcomes including low 5- and 10- minute Apgar scores, neonatal seizures, neonatal intensive care unit (NICU) admission, immediate ventilation, and preterm delivery was stratified by obesity class.
- Risk was evaluated by log linear regression modeling with the primary exposure of obesity.
- Models were adjusted for age, race, insurance status, diabetes, hypertension, mode of delivery, chorioamnionitis, fetal anomalies and preterm delivery.
- Adjusted risk ratios (aRR) were used as measures of association.

FIGURES

Figure 1: Incidence of maternal peripartum complications in all deliveries by obesity class.

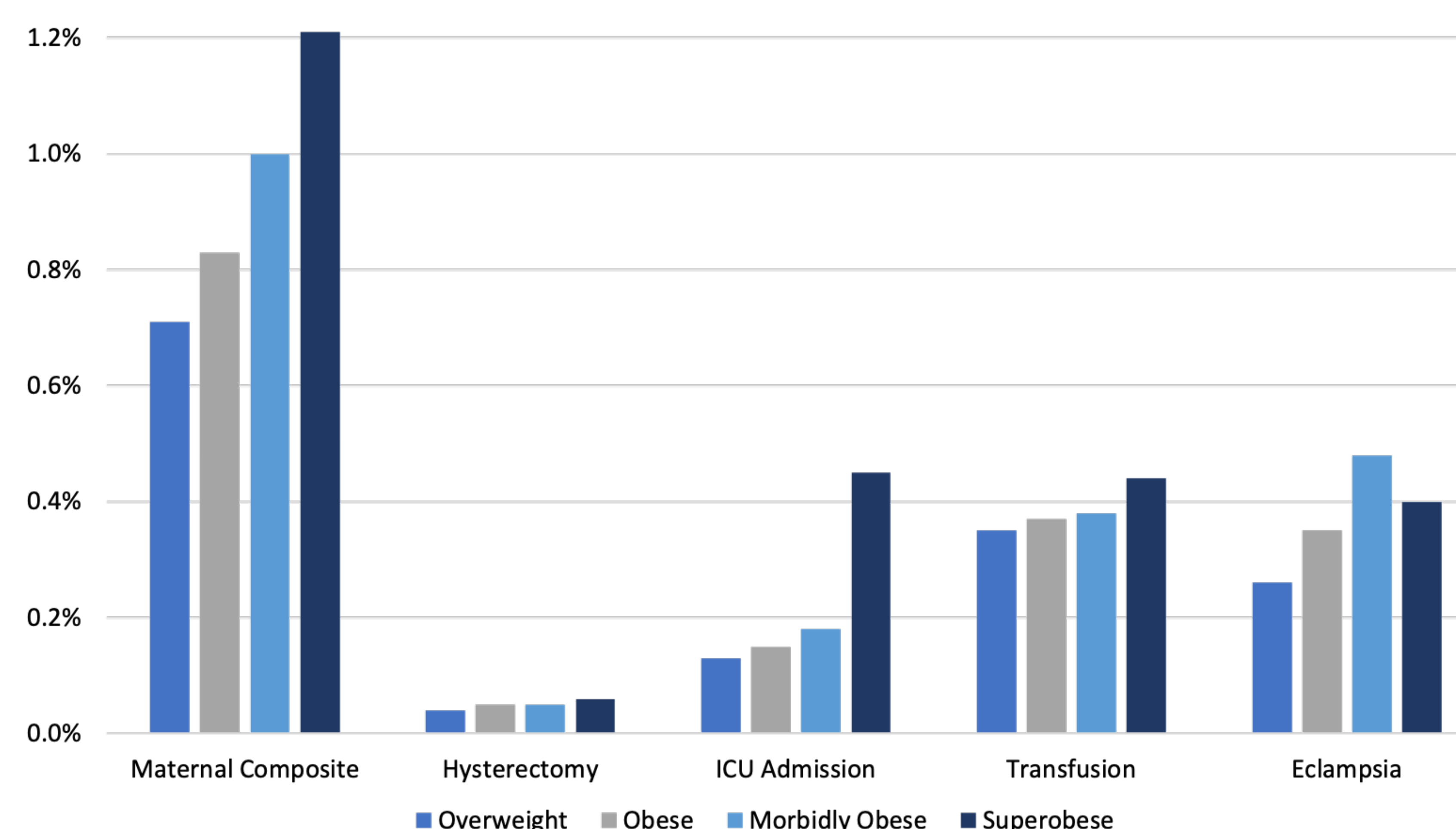
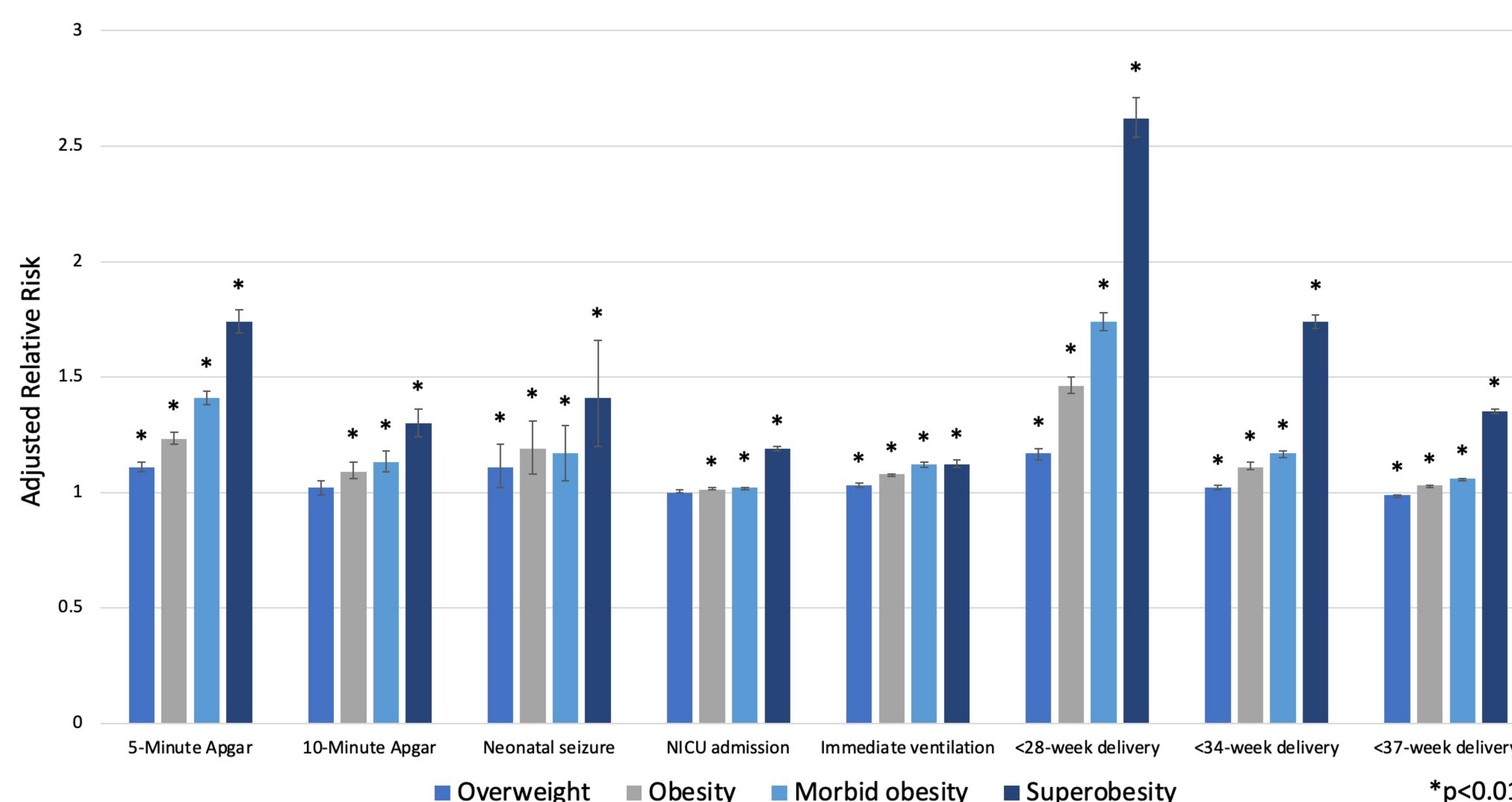


Figure 2: Risk of maternal superobesity on neonatal outcomes. Adjusted for age, race, insurance, diabetes, hypertension, delivery mode, chorioamnionitis, fetal anomalies and preterm delivery.



RESULTS

- 3.2% (n=360,742) of 11.2M deliveries with superobesity.
- Compared to women of normal BMI, superobese women had higher rates of primary (22.1% v. 15.8%) and repeat cesarean delivery (16.7% v. 10.0%).
- The incidence of maternal peripartum complications was higher for superobese women and generally increased with higher BMI (aRR 1.33, 95%CI 1.29, 1.39, Figure 1).
- Neonates born to women with superobesity were at significantly higher risk for Apgar score <5 at 5 (aRR 1.74, 95% CI 1.69, 1.79) and 10 minutes (aRR 1.30, 95% CI 1.24, 1.36), neonatal seizures (aRR 1.41, 95% CI 1.20, 1.66), NICU admission (aRR 1.19, 95% CI 1.18, 1.20), and immediate ventilation (aRR 1.12, 95% CI 1.11, 1.14) compared to normal BMI (Figure 2).
- They were also at higher risk for preterm delivery (<28 weeks: aRR 2.62, 95% CI 2.54, 2.71; <34 weeks: aRR 1.74, 95% CI 1.71, 1.77; <37 weeks: aRR 1.35, 95% CI 1.34, 1.36) compared to normal BMI.

CONCLUSIONS

- Women with superobesity are at higher risk of poor perinatal outcomes compared to women with lower BMI.
- These findings confirm the significant risks of superobesity and underscore the importance of pre-conceptional health optimization.