



Background

Pre-pregnancy BMI has been shown to be related to pregnancy outcomes. Specifically, women with a high pre-pregnancy BMI are at an increased risk for preeclampsia and macrosomia¹. In addition, overweight and obesity are risk factors for depression, yet their association with postpartum depression is inconclusive². Postpartum depression has been associated with serious adverse physical and psychosocial health outcomes for new infants, such as interrupted sleep patterns, impaired maternal and infant interactions, and poorer preventive health practices^{3,4}. Poor outcomes for women with a high pre-pregnancy BMI have been greatly reduced when women stayed within healthy weight gain recommendations⁵.

Study Objectives

To investigate the relationship among pre-pregnancy BMI, a woman's adherence to her recommended weight gain guidelines, and postpartum depression.

Methods

This is a secondary data analysis using Los Angeles Mommy and Baby (LAMB) project data. LAMB is a survey used as a surveillance system to monitor maternal and infant health in the County every two years since 2005. It examines areas that are known to have an impact on birth outcomes, including preconception health, prenatal care, maternal medical conditions, psychosocial risk factors, and behavioral risk factors.

Questions in LAMB survey relating to BMI and Depression

- Body weight just before pregnancy
- Body weight just before giving birth
- In the six months before you got pregnant, did you suffer from depression?
- In the months after your new baby was born, would you say that were not depressed at all, a little depressed, moderately depressed, or very depressed?

Analysis: all data analyses were conducted using Statistical Analysis Software (SAS) version 9.2 survey procedures to account for the complex sampling scheme

- Descriptive analyses using weights were done to estimate the population prevalences
- Bi-variate analyses were done using the Rao-Scott Chi-Square statistic

Results and Figures

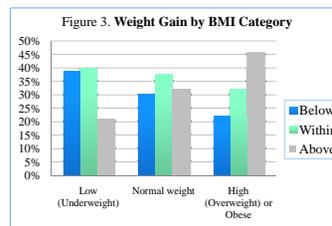
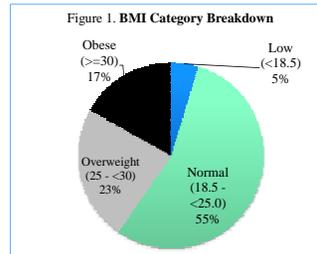
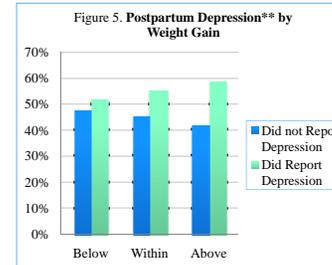
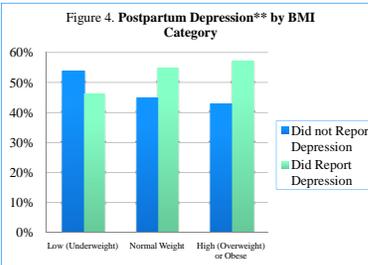


Figure 2. Recommended Weight Gain Based on BMI*

Pre-pregnancy BMI	Recommended total weight gain
Low (<19.8)	28-40 lbs
Normal (19.8-26.0)	25-35 lbs
High (26.0-29.0)	15-25 lbs
Obese (>29.0)	15+ lbs

*Data collected before the Institute of Medicine published the new 2009 guidelines. Analysis run with the new BMI categories in Figure 1 and the old weight gain values in Figure 2.

**Postpartum depression was categorized as having felt at all depressed after pregnancy



Analysis

45% of women (Figure 1) were either overweight or obese just before pregnancy. 54% of women who gained above the recommended guidelines (Figure 3) were also overweight or obese prior to pregnancy.

In women who had not reported depression before pregnancy there was a statistically insignificant dose response effect seen (Figure 4) in pre-pregnancy BMI category and the rate of post partum depression (46% underweight, 55% normal weight, 56% overweight, and 58% obese, respectively).

However, women who gained weight within their recommended guidelines (Figure 5) regardless of BMI had a post partum depression rate equal to the rate of women with a normal BMI of 55%.

Women who were either overweight or obese tended to gain more weight than recommended (OR=1.7 [1.5, 2.0]) compared to normal or overweight women.

Conclusion

Our findings indicate that many women are beginning pregnancy at an unhealthy weight and are consequently at a higher risk not only for gaining too much weight during their pregnancy, but might also be at a higher risk for suffering from psychosocial problems.

Because these results suggest that women who are overweight are at an increased risk for depression, much effort and emphasis should be placed on preconception and interconception health. Preconception and prenatal health care providers must empower women and increase their self-efficacy regarding healthy eating and exercise, especially those with a high BMI.

In order to accomplish this goal, our diverse community requires culturally-sensitive preconception health care along with access to nutrition experts who can assist women to lose weight before and between pregnancies. This way women may begin subsequent pregnancies at a healthier body weight.

Limitations

The data is all self-reported and subject to recall bias, and the depression variable is not a medical diagnosis, but the woman's perception of depression. Women do not always remember how much weight the physician recommended to gain 6 months to 1 year later. Lastly, physicians do not always give to their patients specific recommendations of weight to gain.

Literature Cited

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For further information, please visit www.LALamb.org

