



RACIAL AND ETHNIC DISPARITIES IN SELF-REPORTED POST-PARTUM DEPRESSION IN WOMEN UNDERGOING FERTILITY

TREATMENT IN THE UNITED STATES: PREGNANCY RISK ASSESSMENT MONITORING SYSTEM (PRAMS), 2012-2019

Pardis Hosseinzadeh MD¹ . Osariemen Omoregie² . Christen Jarshaw¹ . Angela Xing¹ . Ashley Kim, MD¹ . LaTasha B Craig, MD¹ . Jennifer D Peck ,PhD²

1.Section of REI; Dept of Ob/Gyn, University of Oklahoma Health Science Center, Oklahoma City, OK, 2.Dept of Biostatistics and Epidemiology, OU Health Sciences Center, Oklahoma City, OK

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INTRODUCTION

- Post-partum depression (PPD) affects 1 in 9 women in the US and causes significant morbidity and mortality.¹
- Despite being a national public health priority, few studies have explored its cultural context with respect to different racial/ethnic groups.
- Infertility and infertility treatment are profound life stressors, with some studies indicating that women who undergo infertility treatment are at increased risk of PPD.²
- Little is known about PPD among individuals undergoing fertility treatment and if it disproportionately affects some racial/ethnic groups.

OBJECTIVE

To evaluate racial/ethnic differences in self-reported PPD in those undergoing fertility treatment in the United States.

MATERIALS & METHODS

- Cross-sectional study of PRAMS database 2012 - 2019.
- Infertility treatment status (yes/no) was obtained from the linked birth certificate.
- In the PRAMS questionnaire, women were asked to indicate using a Likert scale how often they felt [1] down, depressed, or hopeless; or [2] had little interest or little pleasure in doing things. The CDC categorizes women as “positive PPD” if they responded “always” or “often” to either of the 2 questions.
- Weighted frequencies of participant characteristics were compared by PPD symptoms using the Rao Scott chi square test.
- Unadjusted and adjusted weighted logistic regression analyses for complex survey designs were performed to estimate odds ratios and 95% confidence intervals (CI).

Table 1: Self-reported postpartum depressive symptoms by race/ethnicity among women who did and did not receive infertility treatment, Pregnancy Risk Assessment and Monitoring System (PRAMS), 2012-2019 (N=210,426)

| Variable | Yes n (weighted %) | No n (weighted %) | P-value* |
|-----------------------|-----------------------|----------------------|----------|
| Infertility treatment | | | |
| Yes | 486 (8.1) | 4501 (91.9) | <.0001 |
| No | 28623 (12.5) | 176816 (87.5) | |
| Race/ethnicity | | | |
| Hispanic | 4164 (11.6) | 30610 (88.4) | <.0001 |
| White | 12113 (10.8) | 92239 (89.2) | |
| Black | 7544 (17.5) | 32856 (82.5) | |
| Asian | 2478 (17.3) | 11537 (82.7) | |
| Other | 2810 (16.0) | 14075 (84.0) | |

Table 2: Crude and adjusted odds ratio of self-reported postpartum depressive symptoms by race/ethnicity among women who received infertility treatment, Pregnancy Risk Assessment and Monitoring System (PRAMS), 2012-2019.

| Race/ethnicity | Crude OR (95% CI) | Adjusted OR ^a (95% CI) |
|----------------|-------------------|-----------------------------------|
| White | Referent | Referent |
| Hispanic | 1.29 (0.71-2.34) | 1.35 (0.70-2.58) |
| Black | 1.99 (0.93-4.24) | 1.99 (0.89-4.44) |
| Asian | 0.76 (0.42-1.35) | 0.77 (0.42-1.40) |
| Other | 1.16 (0.54-2.48) | 1.12 (0.52-2.44) |

^a Adjusted OR controls for maternal age at delivery, parity, mother’s education, marital status, low birth weight, preterm delivery, length of hospital stay, maternal smoking status in the last 3 months of pregnancy, multiple gestation, history of abuse, and WIC participation.

RESULTS

- Among 4,987 women undergoing infertility treatment, the estimated prevalence of PPD was 8.1% (n=486). **Table 1**
- Out of participants who underwent fertility treatment and reported PPD, sample size was suboptimal (White = 249, All other n <40). (data not shown)
- Odds of PPD were approximately twice as high among NH-Black when compared to NH-White individuals, although the confidence interval was wide and included the null value (OR: 1.99, 95% CI: 0.93 - 4.24). **Table 2**
- Odds of PPD were similar within Hispanic, Asian, and “other” respondents compared to their referent. **Table 3**
- Odds of PPD among White respondents who did undergo fertility treatment was lower than those who did not undergo fertility treatment. **Table 3**

Table 3: Crude odds and adjusted analysis of postpartum depression by infertility treatment status (N = 210,426) stratified by race/ethnicity, Pregnancy Risk Assessment Monitoring System (PRAMS), 2012 – 2019

| Race/ethnicity | Crude OR (95% CI) | Adjusted OR ^a (95% CI) |
|------------------------------|--------------------|-----------------------------------|
| All | | |
| Infertility treatment status | | |
| Yes | 0.62 (0.53 – 0.72) | 0.99 (0.84 – 1.17) |
| No | Referent | Referent |
| Hispanic (n = 34,774) | | |
| Infertility treatment status | | |
| Yes | 0.76 (0.46 – 1.24) | ----- |
| No | Referent | |
| White (n = 104,352) | | |
| Infertility treatment status | | |
| Yes | 0.64 (0.53 – 0.78) | ----- |
| No | Referent | |
| Black (n = 40,400) | | |
| Infertility treatment status | | |
| Yes | 0.67 (0.32 – 1.43) | ----- |
| No | Referent | |
| Asian (n = 14,015) | | |
| Infertility treatment status | | |
| Yes | 0.74 (0.52 – 1.07) | ----- |
| No | Referent | |
| Other (n = 16,885) | | |
| Infertility treatment status | | |
| Yes | 0.46 (0.24 – 0.88) | ----- |
| No | Referent | |

^a Adjusted for maternal age, race/ethnicity, mother's education, marital status, payment method, parity, plurality, maternal smoking status, gestational age, birth weight, hospital stay, abuse, stresses, birth defect, and WIC participation

CONCLUSION

- Although the lower bound of the confidence interval for Black respondents crossed 1.0, the magnitude of the estimated differences suggests that racial/ethnic disparities in PPD warrant further investigation in this population.
- White participants that did undergo fertility treatment had a lower report of PPD
- Individuals that underwent fertility treatment do not have a higher risk of PPD. Fertility treatment may even be protective in some cases.