Preterm Birth Among Opioid-Using Women and High-Risk Controls: The Potential Moderating Role of Borderline Features

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Introduction

Opioid Use Disorder (OUD) and Preterm Birth

- OUD is linked to increases in the likelihood of preterm birth, defined as delivery before 37 weeks gestation (Patrick, 2012).
- Preterm birth is responsible for 85% of perinatal deaths, so opioid use poses increased risks on the health of the mother and the baby (de Bernabe, 2004; Kramer, 2000; Norwitz & Robinson, 2001).
- Management of OUD with methadone during pregnancy makes women 4.32 times more likely to give birth preterm than controls (Clearly, 2011).
- Research has yet to identify if there is any increased risk for preterm birth in women who use opioids during pregnancy and self-report borderline features .

Borderline Personality Disorder (BPD) and Preterm Birth

- BPD is a psychological disorder with symptoms that include impulsivity in at least two areas that are self-damaging, such as spending, reckless driving, binge eating, etc.
- Women may also show borderline features without a diagnosis of BPD due to lack of access to care or unwillingness to seek care.
- Women with BPD are more likely to experience preterm birth than individuals without BPD due to specific risks imposed by their behaviors and experiences (Blankley, Galbally, Snellen, Power, & Lewis, 2015).
  - E.g. Identity disturbance in pregnant women with BPD challenges the transition to motherhood, which may make women less likely to engage in prenatal care and thus be more likely to deliver preterm (Vintzileos, Ananth, Smulian, Scorza, Knuppel, 2002).
- 16.78% of women with BPD gave birth preterm compared to 7.48% of women in the general population (Pre-Miron, Czuzoj-Shulman, Oddy, Spence, and Abenhaim, 2016).
- While it is known that women with BPD are at risk for preterm birth and that BPD is a comorbidity for opioid use, no studies have evaluated BPD or borderline features and preterm birth in the context of opioid use.

OUD, BPD, and Preterm Birth

- Because BPD predisposes women to engage in risky behaviors, women with BPD are more likely to use substances. If using while pregnant, the risks of preterm birth is heightened more than just if the woman has BPD or OUD alone.
- Research has yet to examine the increased risk that BPD or borderline features may have on preterm birth in a woman who is pregnant and using opioids.

The Present Study

- Sought to address these aforementioned gaps in the literature by examining how borderline features such as affective instability, identity disturbance, presence of negative relationships, and self-impulsivity will moderate the relationship between opioid use and preterm birth.
  - We expect to replicate findings from past studies and hypothesize that women who used opioids in pregnancy would be more likely to give birth preterm (hypothesis A) and at lower gestational age (hypothesis B) than high risk medical comparisons.
  - We expect to replicate findings from past studies and hypothesize that women who self-report borderline features in our study will be more likely to give birth preterm (hypothesis A) and at lower gestational age (hypothesis B) than high risk medical comparisons.
  - Since women who show borderline features or have BPD are at a greater risk for preterm birth because of their behaviors and experiences, and since women with BPD are more likely to use opioids, we hypothesize that borderline features will be associated with a stronger relationship between opioid use and preterm birth.

Hypotheses

- Opioid use during pregnancy is predictive of preterm birth (H1A) and gestational age at birth (H1B).
- Borderline personality disorder is predictive of preterm birth (H2A) and gestational age at birth (H2B)
- Borderline features moderate the relationship between opioid use and gestational age at birth (H3).

Method

Participants

- 90 high-risk women with OUD (n =53) or other medical conditions (n = 37).
  - Other medical conditions included obesity, high blood pressure, multiple gestation, and heart disease.

Procedure

- Recruited from high-risk obstetrics clinic by flyers in clinic waiting room and word of mouth from the physicians working in the clinic.
- Patient interested greeted in separate room before or after her appointment with her doctor.
- Upon enrollment, participant completed a questionnaire packet, and research assistant obtained information from participant's medical chart.

Measures

- **Demographics**: The demographics assessed included race, employment status, relationship status, and gestational age.
- **Borderline Features** were measured using The Personality Inventory – Borderline Features Scale (PAI-BOR). A score of 38 or above would be equivalent to a BPD diagnosis; (Morey, 1991; Trull, 1995)
  - Ex. "My mood can shift quite suddenly" (affective instability) or "My attitude about myself changes a lot" (identity problems).
- **Opioid Use** was verified through a urine screen or a prescription for opioid withdrawal management medication, buprenorphine.
- **Preterm Birth** was a categorical variable obtained from medical records. A continuous variable of gestational age at birth was assessed.
  - Preterm birth was defined as birth before 37 weeks gestation.

Results

- **Analytic Strategy:** T-tests and chi-square tests were used to evaluate continuous variables and categorical variables, respectively. Binomial logistic regression was used to assess the relationship between both OUD and BPD and preterm birth. ANOVA was used to evaluate whether OUD predicted gestational age at birth. The Pearson product-moment correlation was used to evaluate the relationship between borderline features and gestational age at birth. Binomial linear regression was used to evaluate the moderation of BPD between OUD and preterm birth.
- **H1A**: Opioid use will predict preterm birth: *Not supported*
- **H1B**: Opioid use will predict gestational age: *Not supported.*
  - OUD gave birth at 38.12 weeks on average; control group gave birth at 37.65 weeks on average.
- **H2A**: BPD will predict preterm birth: *Supported.*
  - χ^2 (1)= 4.933, p < .05.
- **H2B**: BPD will predict gestational age: *Not supported.*
- **H3**: Borderline features moderate the relationship between opioid use and gestational age at birth: *Not supported.*

Discussion

Conclusions

- OUD does not impose a risk of preterm birth over and above what is expected for a high-risk pregnancy.
- It is likely that risk of preterm birth from BPD does not increase simply based off an increase in self-reported symptoms, but rather once self-reported symptoms reach the threshold used to approximate a diagnosis.
- This is the first study we know of to date to use a high-risk control group as opposed to a normative control group.
- This control group allows for analysis of the risks of opioid use in comparison to those with a high-risk pregnancy from other medical conditions.

Future Directions

- With a larger sample, we could better understand how the differences in the potential ways of using opioids during pregnancy (illicit use, prescribed use, etc.) may be related to the rates of preterm birth.
- With a more diverse sample, we would be more able to generalize our results to all groups of women and better understand how these variables interact in the population as a whole.

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