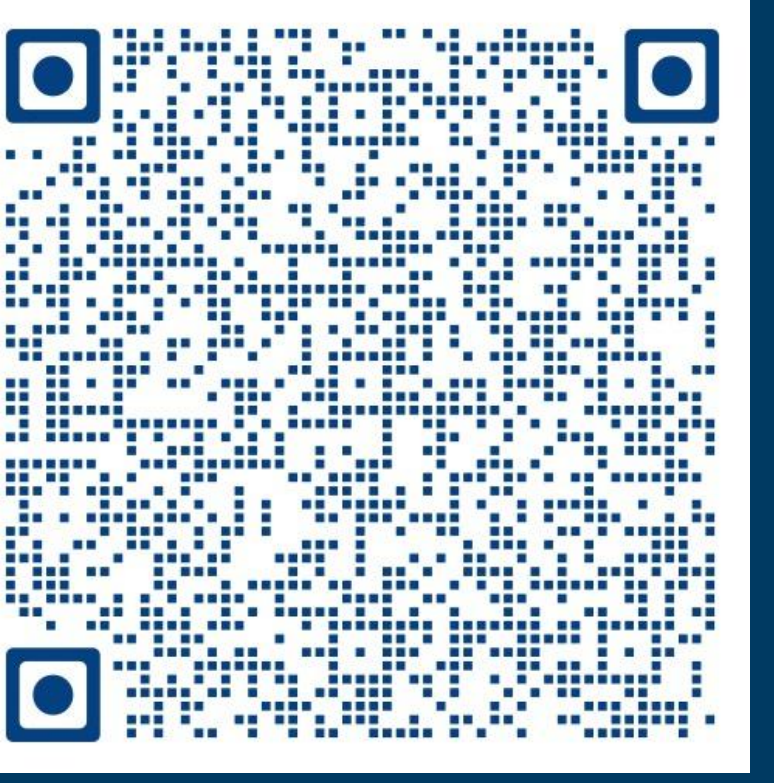


Pregnancy and Birth Correlates Associated with Maternal Use of Benzodiazepines

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Scan for Presentation

Background

- 17.1% of the 30.5 million Americans report misusing benzodiazepines with benzodiazepine use doubling in women during pregnancy (NIDA, 2018; Votaw et al., 2019)
- Benzodiazepines have been shown to treat anxiety and depression
- Research examining the effect of benzodiazepines on pregnancy and their infant's development is limited (Qato and Gandhi, 2021)
- Evaluating this data is critical to design guidelines for appropriate treatment of maternal mental health problems during pregnancy
- The goal of this study is to characterize the frequency of benzodiazepine use in women during pregnancy and describe the association of prenatal benzodiazepine use to maternal medical and mental health diagnoses and to infant birth outcomes

Population

Women and their infants who were admitted to University Hospitals (UH), Cleveland, OH for labor and delivery between August 2014 and February 2023.

Learning Objectives

- Assess and classify** data using data collection instruments (surveys, screeners) in REDCap
- Organize and present** previous research done on the topic in a succinct and efficient manner
- Prepare and formulate** a project proposal plan for IRB approval

Activities

- Assist in submission of proposal to IRB
- Research previous studies that conducted research on benzodiazepine use
- Review and collect data from electronic medical records (EMRs) after IRB approval
- Enter data into REDCap database

Deliverables

- Written report describing previous research on the impact of benzodiazepine use in pregnancy on maternal and infant outcomes.
- REDCap report of data extracted from electronic medical records (EMRs).

Methods

- Medical records were identified by ICD-10 codes with the inclusion criteria:
 - Use of benzodiazepines or illicit drugs within 9 months before or after the code O00-O9A documented in the EMR
 - Maternal age between 18 and 45 years
 - Substance exposed newborns affected by maternal drug exposure (ICD-10 codes P04.49, P96.1) admitted for birth or the NICU (Neonatal Intensive Care Unit)
 - Infants aged between 0 - 6 months
- Exclusion criteria included subjects without ICD-10 codes related to maternal substance use

Identification of Population

- Records were identified by UH research department
- EMRs were reviewed and extracted into the REDCap database

Variables

- Demographics
- Maternal diagnoses (mental health and physical health)
- Maternal substance use (benzodiazepine and polysubstance use)
- Perinatal, postnatal, birth, and delivery outcomes
- Maternal and/or infant toxicology screens

Discussion

- Data from 54 records were entered into REDCap
- National estimates of benzodiazepine use during pregnancy are approximately 2.9% (Votaw et al., 2019), however in this population, 3.7% of women tested positive for benzodiazepines
- This suggests there is greater benzodiazepine use in this area, possibly greater than the national average
- However, there is not enough data to reach reliable and valid conclusions

Future Direction

- Further research is necessary to conduct additional chart reviews with a more specified search criteria for benzodiazepine use
- The goal of future research would be to better understand the potential impacts of benzodiazepine use on maternal and infant health outcomes and to inform clinical practice guidelines for prescribing benzodiazepines during pregnancy
- Additionally, the results of this research could potentially contribute to public health efforts aimed at reducing the misuse of benzodiazepines and promoting safer alternatives for managing anxiety and depression during pregnancy

Results

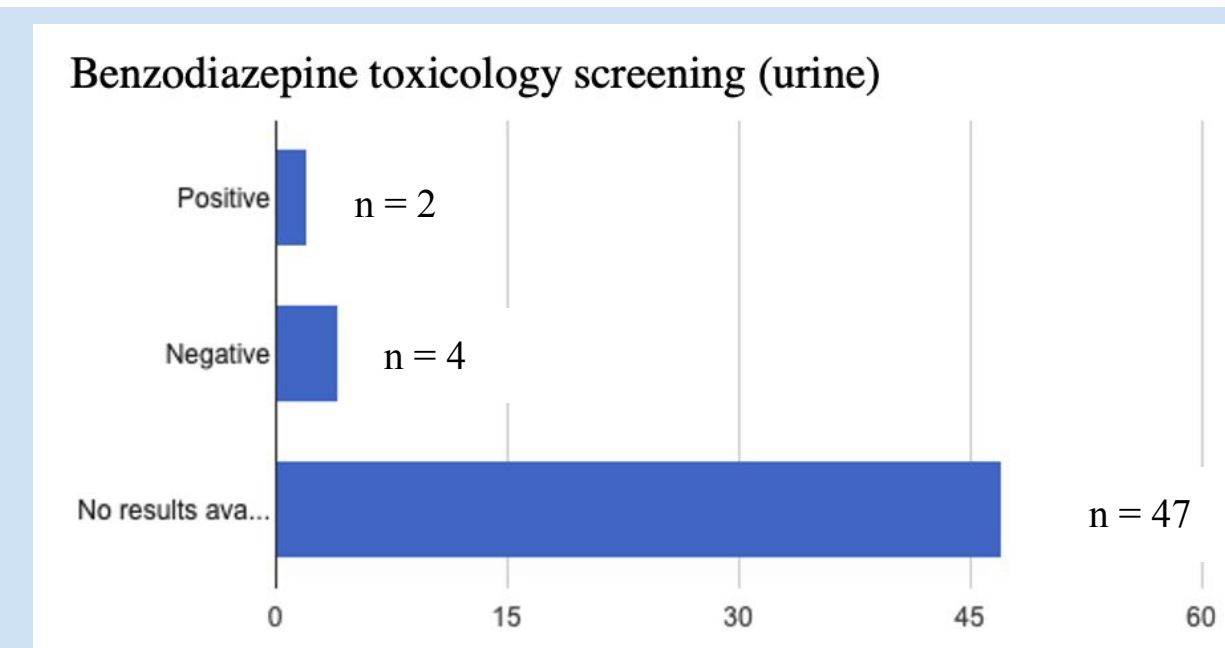


Figure 1. Maternal benzodiazepine toxicology screening. Positive screens accounted for 3.7% records. Negative screens accounted for 7.4% of records. No results available signifies a toxicology screened was not available in the mother's chart or it was not performed by the healthcare provider.

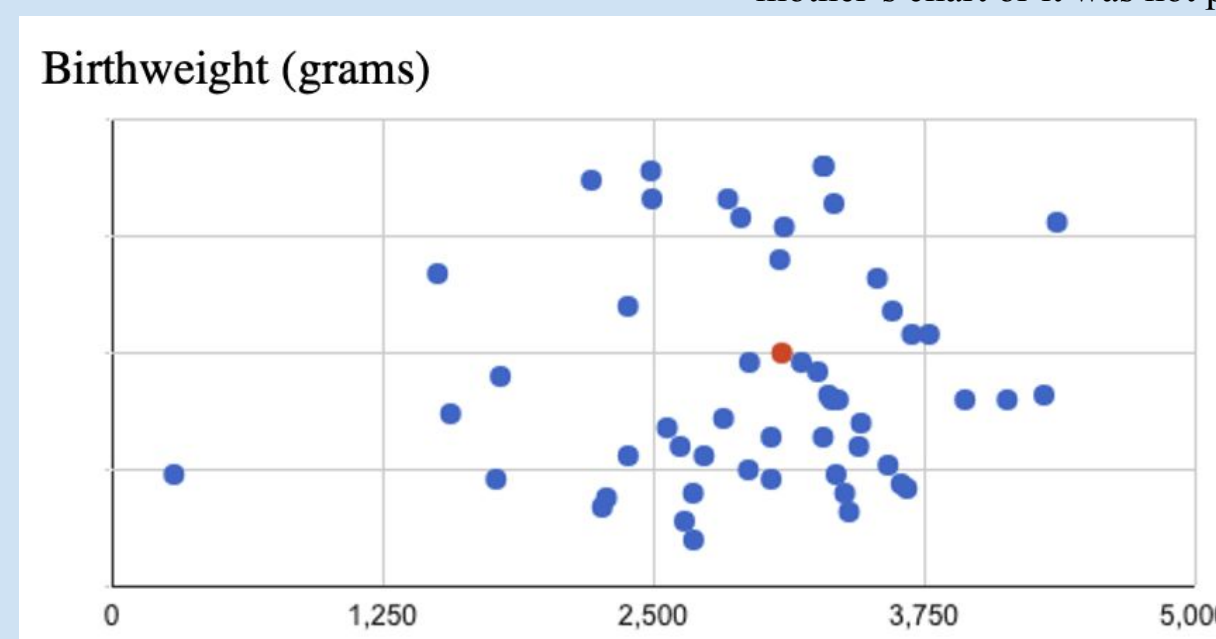


Figure 2. Birthweight (grams). Scatter plot of the infant's birth weight, with a minimum of roughly 310 grams and a maximum of roughly 4,400 grams.

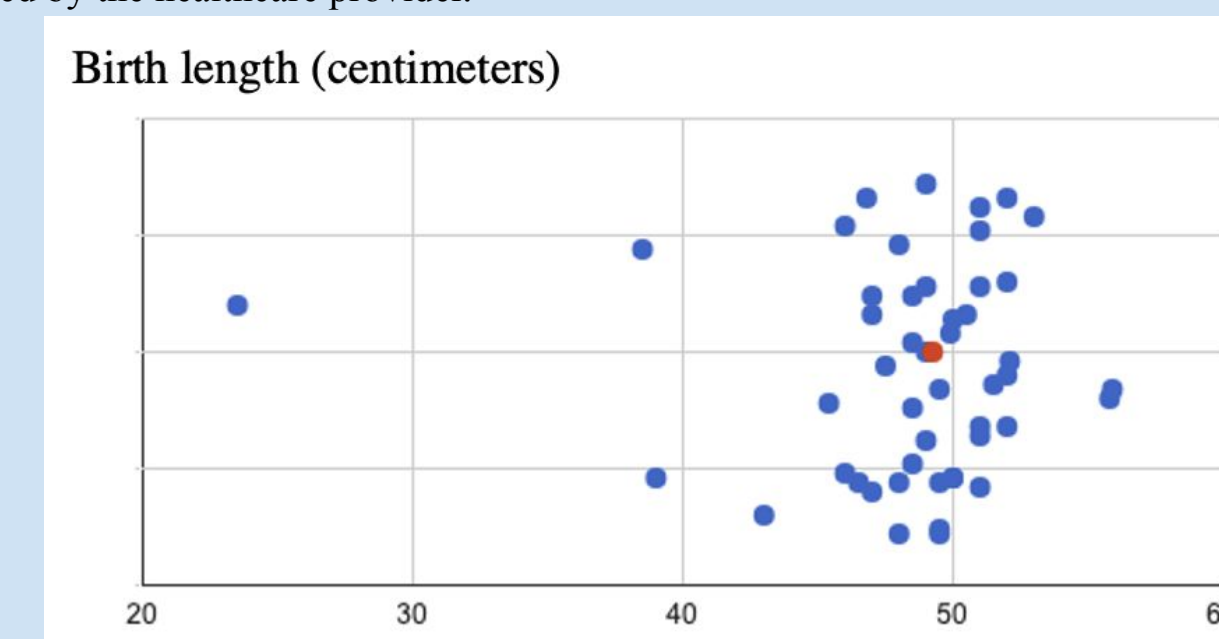


Figure 3. Birth length (centimeters). Scatter plot of the infant's birth length, with a minimum of roughly 24 cm and a maximum of roughly 57 cm.

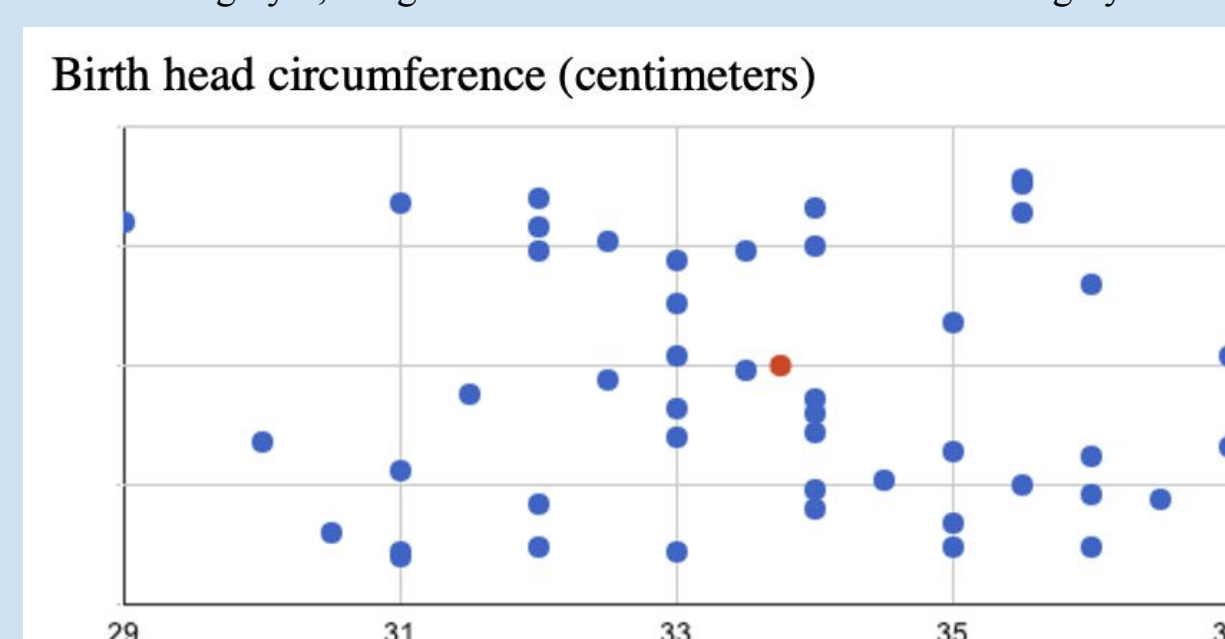


Figure 4. Birth head circumference (centimeters). Scatter plot of infant's birth head circumference with a minimum of 29 cm and a maximum of 37 cm.

Acknowledgements

I would like to express my gratitude to my preceptor, Dr. Licia Clowtis, in guiding me in this project, mentoring me, and playing a significant role in my personal growth at CWRU. I would also like to thank Dr. Lynn Singer for her invaluable feedback and support throughout my practicum and capstone experience.

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