

In Utero Drug Exposure Impact on Infant Health

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Literature Review #1

Purpose: The purpose of this study was to examine the consequences and risk factors of opioid drug use during pregnancy on the baby. The research question was “What are the prenatal risk factors and perinatal and postnatal outcomes associated with maternal opioid use during pregnancy?”

Design: Cohort study of urban, low income, multiethnic mother-infant pairs.

Sample: 8,905 urban, low-income, and multiethnic mother-infant pairs at Boston Medical Center. The sample was also limited to mothers giving birth to a single infant and having a live birth.

Reliability and validity of information: The study used the mother’s and infant’s electronic medical record (EMR) measure the outcomes. The article does not specifically state the validity or reliability of the EMR. One can assume the patient’s EMR is both valid and reliable because it is considered to be a legal document.

Results: The main results of this study were in utero opioid exposure is associated with preterm birth, higher risk of fetal growth restriction, and lack of physiological development. This study found that prenatal opioid exposure led to an increased risk of perinatal and postnatal health outcomes.

Conclusion: This study shows that there is significant evidence that in utero exposure to drugs impacts the infant's health. This study also shows in utero drug exposure impacts the infant’s development.

Azuine, R., Ji, Y., & Chang, H.-Y. (2019). Prenatal Risk Factors and Perinatal and Postnatal Outcomes Associated With Maternal Opioid Exposure in an Urban, Low-Income, Multiethnic US Population. *Jama Network Open*, 2(6). doi: 10.1001/jamanetworkopen.2019.6405

Recommendations for practice change

The current practice should be changed to educate mothers about the risks of using drugs during pregnancy and the effects it can have on their child. Education should begin when women reach childbearing age. Preventative education is important because once the mother conceives a baby it is too late, the baby has already been exposed to the drugs. Further research needs to be done to find effective interventions to help mothers cease their drug use.

PICOT Question

In newborns, what is the effect of drug use by the expecting mother in comparison to no drug use by the expecting mother in the baby’s first year of life?

Why is this a problem?

Drug exposure in utero poses a significant threat to the infant’s health compared to no drug exposure. These health impacts not only affect the infant at birth but as the child ages. Some of these risks include preterm birth, low birth weight, neurocognitive, and physical development problems.

Clinical Significance

Research shows that in utero drug exposure increases health risks for the infant. Interventions need to be implemented to decrease the number of expecting mothers who use drugs. It is important for healthcare providers to acknowledge all substances that may put the fetus at harm. The results from this research can be used to help healthcare providers educate their patients on the importance of abstaining from these harmful substances.

Literature Review #2

Purpose: The purpose of this study was to determine the relationship between prenatal opioid exposure and the cognitive and motor development of that child.

Design: Retrospective cohort study- Two exposure groups: prenatal opioid exposure and no prenatal opioid exposure.

Sample: In this sample of 26 studies, 1,455 children who had prenatal opioid exposure were studied and compared to 2,982 children who did not have prenatal opioid exposure in regards to their cognitive and motor development.

Reliability and validity of information: This article was valid and reliable because it was completed by studying 26 other cohort studies done on the topic of opioid use during pregnancy. It was also reliable and valid because they worked hard not to have bias during the research and found very educational articles.

Results: The primary outcome of the study indicated that prenatal opioid exposure is negatively associated with neurocognitive and physical development from the ages of 6 months until adolescence. Children that were exposed to opioids prenatally had lower cognitive and motor scores than those children who had not been exposed to opioids prenatally. Prenatal opioid exposure has also been associated with increases in the risk of perinatal problems, including neonatal abstinence syndrome (NAS), prematurity, and low birth weight.

Conclusion: This study shows there is significant evidence that prenatal opioid exposure has negative effects on an infant's health. This study also shows that prenatal opioid exposure results in lower cognitive and motor development.

Yeoh, S.L., Eastwood, J., Wright, I. M., Morton, R., Melhuish, E., Ward, M., & Oei, J. L. (2019). Cognitive and Motor Outcomes of Children With Prenatal Opioid Exposure: A Systematic Review and Meta-analysis. *JAMA Network Open*, 2(7), e197025. <https://doi:10.1001/jamanetworkopen.2019.7025>