

What is the prevalence of birth defects in infants born to mothers with eating disorders, compared to infants born to mothers without eating disorders?

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Abstract. Introduction: The prenatal period is critical in determining the quality of fetal development and how the infant responds outside of the womb. Many know teratogens exist, but the medical literature evaluating fetal outcome in the presence of maternal eating disorders shows conflicting data. Methodology: The purpose of this study was to compare the prevalence of birth defects in infants born to mothers with eating disorders to those without eating disorders. This was an evidence-based literature review using the following inclusion criteria; women meeting DSM-IV criteria for anorexia nervosa, bulimia or eating disorders not otherwise specified[1]; studies must have made an attempt to eliminate confounding factors such as cigarette smoking or chronic disease; all articles were published in peer reviewed journals from 1980 to present. Results: Seventeen articles met the inclusion criteria as stated above. There were no differences between case and control groups in the occurrence of fetal birth defects, but the occurrence of adverse pregnancy outcome including terminated pregnancies, miscarriage and abortion was 24.7% in case groups and 12.5% in the control group. Conclusion: To avoid undesirable pregnancy outcome and health care providers should screen patients for eating disorders prior to conception and educate women on the possible effects of eating disorders on the outcome of their pregnancy.

1. Introduction

The prenatal period is critical in determining the quality of fetal development as well as how the infant responds and develops outside of the womb after birth. Factors such as physical and emotional maternal stress and substance abuse during pregnancy have all been linked to increase risk of harm to an infant during development. During critical times of prenatal development certain physiologic structures and systems are considered to be highly plastic and easily influenced by the environment the mother provides for the fetus. After periods of plasticity have passed, certain stages in the child's developmental progression are anatomically fixed. A birth defect is something that develops while the baby is maturing in the womb and most commonly occurs during the first 3 months of pregnancy and usually detected within the first year of life[2]. Because eating disorders such as anorexia nervosa, bulimia nervosa and eating disorders not otherwise specified as outlined in the DSM-IV occur primarily in women of childbearing age, one must suspect that eating disorders and pregnancy often occur simultaneously. The literature to date concerning pregnancy outcome in women with eating disorders is not definitive. Some studies suggest outcomes such as pre-term delivery, small for gestational age (SGA) birth weights, intrauterine growth restriction (IUGR) and low Apgar scores in babies born to mothers with eating disorders. Current research concerning inadequate nutrient supply to a fetus is investigating its influence on cardiovascular, endocrine and even immune system development throughout life, abnormalities that developed in the mother's womb.

2. Results

The purpose of this evidenced-based literature review was to determine if there is an association between maternal eating disorders and neonatal birth defects present after birth. Topics addressed in evaluation of this literature are; behavior/temperamental domains, pregnancy outcome, physical congenital malformations and appropriate developmental progression after birth. The literature search was conducted utilizing Medline and FirstSearch electronic databases. Literature chosen must have included women meeting DSM-IV criteria for anorexia nervosa, bulimia nervosa or eating disorders not otherwise specified. Studies attempting to eliminate possible confounding factors such as cigarette smoking or chronic disease were also preferred for inclusion in the review. Several studies in this review evaluated the occurrence rate of congenital malformations. Results showed the occurrence of congenital malformations

in the case and control groups to be 4.6% and 4.1% respectively. Malformations included 1 undescended testicle, 2 ocular abnormalities with visual impairment, 3 heart defects, 1 cleft palate and 1 cleft lip. The most significant finding was in altered pregnancy outcomes. There was a 24.7% occurrence rate of terminated pregnancy, miscarriage and abortion in the maternal eating disordered group. Studies evaluating developmental delays in infants of eating disordered mothers did not show and significant differences than the control groups that were not resolved within 6 months after birth[3].

Table: 1

Fetal birth defects and adverse pregnancy outcomes occurring in eating disordered pregnancies and non-eating disordered pregnancies.

	<i>Fetal Birth Defects*</i>	<i>Delayed Developmental Progression**</i>	<i>Adverse Pregnancy Outcome***</i>
Maternal Eating Disordered Pregnancies	4.6%	3.9%	24.7%
Non-Maternal Eating Disordered Pregnancies	4.1%	0.0%	12.5%

*Includes problems encountered with the infant that may effect how the body looks or works.

**Includes abnormalities in the progression of developmental milestones i.e. sitting, crawling, walking and speech of single words.

***Includes terminated pregnancies, miscarriages and abortions.

3. Conclusions

Women with eating disorders, including anorexia nervosa, bulimia nervosa and eating disorders not otherwise specified as outlined in the DSM-IV, may be at an increased risk for terminated pregnancies, miscarriages and abortions when compared to women without eating disorders. There was a 12.2% higher rate of developmental delays seen in the case group compared to the control group. No significant difference in the occurrence of fetal birth defects was seen, with an occurrence rate of 4.6% in the case group and 4.1% in the control group. Women with active disease should be advised by their health care providers to avoid pregnancy until their eating disorder is in remission to decrease the risk of unfavorable pregnancy outcomes.

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[1]Diagnostic and statistical manual of mental disorders: DSM-IV. Corp Authors(s): American Psychiatric Association; American Psychiatric Association; Talk Force of DSM-IV. Publication: Washington, DC: American Psychiatric Association, Edition: 4th ed. Year: 1994 Description: xxvii, 886 p; 26 cm.

[2]Wolfe BE. Reproductive Health in Women With Eating Disorders. Journal of Obstetric, Gynecologic and Neonatal Nursing. March/April 2005; 34(2): 255-260.

[3] Waugh E., Bulik CM. Offspring of women with eating disorders. International Journal of Eating Disorders. March 1999;25(2):123-133.