

## Maternal mental disorders in pregnancy and the puerperium and risks to infant health

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ternal capacity of caring in the post-partum period thus increasing the risk for infant infection and malnutrition, impaired child growth that is expressed in low weight and height for age, and even behavioral problems and vulnerability to presenting mental disorders in adulthood. Generally speaking, research on this theme can be divided into the type of mental disorder analyzed: studies that research minor mental disorders during pregnancy such as depression and anxiety find an association between these maternal disorders and obstetric complications such as prematurity and low birth weight, whereas studies that evaluate severe maternal mental disorders such as schizophrenia and bipolar disorder have found not only an association with general obstetric complications as well as with congenital malformations and perinatal mortality. Therefore, the success of infant growth care programs also depends on the mother's mental well being. Such findings have led to the need for new public policies in the field of maternal-infant care geared toward the population of mothers. However, more research is necessary so as to confirm the association between all factors with greater scientific rigor.

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### Abstract

Prenatal and postnatal period presents the highest prevalence of mental disorders in women's lives and depression is the most frequent one, affecting approximately one in every five mothers. The aggravating factor here is that during this period psychiatric symptoms affect not only women's health and well-being but may also interfere in the infant's intra and extra-uterine development. Although the causes of the relationship between maternal mental disorders and possible risks to a child's health and development remain unknown, it is suspected that these risks may be related to the use of psychotropic drugs during pregnancy, to substance abuse and the mother's lifestyle. Moreover, after delivery, maternal mental disorders may also impair the ties of affection (bonding) with the newborn and the ma-

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## INTRODUCTION

For many years now, it is largely believed that a pregnant woman's emotions can affect her child's health<sup>[1-4]</sup>, that is, her nutritional, hormonal, metabolic, psychological and social conditions during pregnancy have a direct relationship with the newborn's health<sup>[5-9]</sup>. However, this issue has only been researched around the world in the past few decades<sup>[10-14]</sup>.

Mental disorders are currently considered a global public health problem and affect approximately 10% of the world population, with over 25% prevalence over a lifetime, and are one of the leading causes for years lived with disability<sup>[15,16]</sup>. Prenatal and postnatal period presents the highest prevalence of these disorders in women's lives and depression is the most frequent one<sup>[17-21]</sup>, affecting approximately one in every five mothers<sup>[22-26]</sup>. The aggravating factor here is that during this period psychiatric symptoms affect not only women's health and well-being but may also interfere in the infant's intra and extra-uterine development<sup>[27-31]</sup>.

## CLINICAL AND EPIDEMIOLOGICAL ASPECTS

Although the causes of the relationship between maternal mental disorders and possible risks to a child's health and development remain unknown, it is suspected that these risks may be related to the use of psychotropic drugs during pregnancy<sup>[32,33]</sup>, to substance abuse (alcohol, tobacco and other drugs)<sup>[34]</sup>, the mother's lifestyle (unsatisfactory maternal diet and self-care, sedentary lifestyle and general bad health habits)<sup>[3,13]</sup> and to the precarious socioeconomic status in which they tend to live, more particularly, women with severe mental disorders who have very little material and social resources<sup>[34]</sup>.

Moreover, due to the psychiatric symptoms themselves, mothers with mental disorders during pregnancy may often present less concern with their health status<sup>[35]</sup>. They have difficulty in following medical orientation and getting proper antenatal care which has led to higher neonatal morbimortality risks especially in developing countries<sup>[36]</sup>. After delivery, maternal mental disorders may also impair the ties of affection (bonding) with the newborn<sup>[37]</sup> and the maternal capacity of caring in the post-partum period thus increasing the risk for infant infection and malnutrition<sup>[38]</sup> and impaired child growth that is expressed in low weight and height for age<sup>[10,13]</sup>, and even behavioral problems and vulnerability to presenting mental disorders in adulthood<sup>[39-41]</sup>.

Generally speaking, research on this theme can be divided into the type of mental disorder analyzed. Studies that research minor mental disorders during pregnancy such as depression and anxiety find an association between these maternal disorders and obstetric complications such as prematurity and low birth weight<sup>[1,14,42-44]</sup>. Such studies point to a biological mechanism that could explain this relationship since the hypothalamic-pituitary-

adrenal axis, the mediator of the association between maternal stress and low fetal growth<sup>[45]</sup>, is activated in response to physical and psychological stressors<sup>[46]</sup>. Maternal hypercortisolemia resulting from these mental disorders can change the cortisol cycle leading to an early peak in corticotropin-releasing hormone and consequently to preterm gestation<sup>[47,48]</sup>. Likewise, the resulting increase in fetal cortisol through the placental barrier can inhibit intra-uterine growth when it is present in high concentrations<sup>[49,50]</sup>.

It is worthwhile noting that a large number of these studies present a longitudinal design<sup>[51-55]</sup> and was carried out in developed countries<sup>[56-60]</sup>. However, most do not use standard instruments for the diagnosis of the disorders<sup>[61-64]</sup>-they commonly use screening instruments for depression and anxiety-related symptoms such as the Edinburgh Postnatal Depression Scale<sup>[65]</sup>, the Beck Depression Inventory<sup>[66]</sup> and the Hospital Anxiety and Depression Scale<sup>[67]</sup>, nor lab tests to assess cortisol levels.

On the other hand, studies that evaluate severe maternal mental disorders such as schizophrenia and bipolar disorder have found not only an association with general obstetric complications as well as with congenital malformations and perinatal mortality<sup>[3,6,9,12,68-70]</sup>. Studies on the outcomes of pregnancies of women with psychotic disorders demonstrate a two-fold increase in the risks for malformation in their newborns; when compared to children of mothers with no history of mental disorders, namely cardiovascular diseases and fatal congenital defects, although there are no plausible hypotheses for this association with one or other type of malformation<sup>[6,10,13]</sup>.

However, the vast majority of studies that evaluate the outcomes of pregnancies of mothers with severe psychiatric disorders are based on secondary data, drawing linkages between obstetric and psychiatric data bases in which the control of confounding variables may have been jeopardized since oftentimes there is no information regarding women's socioeconomic status, their use of alcohol, tobacco and other drugs during pregnancy, nor on their psychopharmacological treatment<sup>[3,6,10,12,13]</sup>. As was shown in one study, schizophrenic mothers are in average older than those without the disorder. Moreover, diseases such as diabetes and hypertension are also more frequent among mothers with severe mental disorders such as schizophrenia when compared to those without any mental disorders<sup>[10]</sup>. Such diseases, as well as advanced maternal age, in and of themselves, are renowned risk factors for obstetric complications and infant congenital malformations.

## CONCLUSION

There has been a growing epidemiological and clinical recognition of the importance of maternal mental health, since several studies have presented evidence that mental disorders during pregnancy and post-partum have an impact not only on the mother's health but also affect the newborn's health and development, thus making this

theme an essential one in the field of maternal-infant care. Moreover, the success of infant growth care programs also depend on the mother's mental well being<sup>[1]</sup>. Such findings have led to the need for new public policies for care geared toward the population of mothers. However, more research is necessary so as to confirm the association between all factors with greater scientific rigor, differentiated study designs, primary data-preferably longitudinal; and standardized and validated instruments to assess both exposure and outcome, in addition to associated factors, thus enabling greater control of possible confounding variables and a better understanding of the causal mechanisms involved in the relationship between maternal mental health and the newborn's health.

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