Maternal Prenatal Attachment: An Early Intergenerational Intervention for Child Psychiatry

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Pregnancy is a time of dynamic physiological and psychological changes that prepare the maternal milieu for fetal development and consequently prepare women for motherhood. Psychological changes may include beginning to identify as a mother and establishing feelings of increasing emotional investment and preoccupation with the unborn child.[1] While John Bowlby's original theory of human attachment emphasized the child's attachment to their mother,[2] the mother's emotional attachment to the child is equally important to recognize and may begin before birth.[3] Maternal attachment toward her unborn child has been termed maternal prenatal attachment.

Maternal prenatal attachment can be broadly defined as the cognitive and emotional connection between a woman and her unborn child as the mother transitions to the role of a caregiver and conceptualizes the unborn child as a separate human being.[3,4] Maternal prenatal attachment is multi-dimensional, and includes fantasizing, feelings of closeness/distance with the unborn child, and forming internal representations about the child and quality of the relationship that the mother will form with the child.[3] Maternal prenatal attachment is thought to develop across pregnancy, beginning as early as 10 weeks gestation, potentially reinforced by other aspects of the pregnancy, such as perception of fetal movements and viewing fetal imaging,[4] and serves to increase maternal investment in their offspring. Maternal history of early attachment relationships,[3,5] trauma[6] and associated maternal psychopathology,[7] social support,[7] and cultural views and practices[4] may affect the quality of maternal prenatal attachment. This article highlights the importance of maternal prenatal attachment for mother and child outcomes and introduces a role for child psychiatrists within this framework.

Maternal Prenatal Attachment and Maternal Outcomes

The perinatal period is a time of increased vulnerability for maternal mental and physical health, for which maternal prenatal attachment may serve as a protective factor.[7] Maternal prenatal attachment has been shown to be correlated with protective health behaviors in pregnancy including engagement in consistent prenatal care, seatbelt usage, healthier diet, and exercise.[3] Higher levels of maternal prenatal attachment have been associated with lower levels of posttraumatic stress symptoms during pregnancy[8] and decreased postpartum anxiety and perinatal depression.[1,3] More specifically, in one sample of women in Israel, strong maternal prenatal attachment was a protective factor against postpartum depression for women who were considered at higher risk for depression (ie, women who were more self-critical during the third trimester of pregnancy). [3,4]

Maternal prenatal attachment may also play a role in maternal caregiving outcomes. A recent meta-analysis of 14 studies found consistently across different samples that aspects of maternal prenatal attachment, such as the expectant parents' thoughts about their unborn child, were associated with the quality of future parent-infant interactions (including the levels of parental sensitivity and engagement with the child).[9] In one prospective study of 100 pregnant women in Sweden, those women who reported frequent fantasies about characteristics of their unborn child during the third trimester of pregnancy demonstrated greater stimulating and responsive behaviors (ie, vocalization, smiling, and kissing) during an observed play interaction with their child at 12 weeks postpartum.[5] In a sample of Palestinian mothers who had experienced war trauma, higher levels of maternal prenatal attachment predicted greater self-reported maternal emotional availability at one year postpartum.[7] Conversely, lower levels of

maternal prenatal attachment have been linked to poorer mother-infant bonding postpartum,[1] with potential implications for child outcomes.

Maternal Prenatal Attachment and Infant and Child Outcomes

Critically, maternal prenatal attachment has important implications for infant and child outcomes through its effects on maternal physical and mental wellbeing and the mother-infant relationship during the postpartum period. For instance, a longitudinal study of low-income mothers evidenced that lower levels of maternal prenatal attachment were related to adverse neonatal outcomes, with health practices during pregnancy mediating the relationship.[10] Lower levels of maternal prenatal attachment and associated maternal psychopathology are thought to negatively affect child development.[8] That is, lower levels of maternal prenatal attachment have also been shown to be correlated with more difficult infant temperament while conversely, higher levels of maternal prenatal attachment have been associated with adaptive outcomes including lower colic ratings[11] and increased achievement of developmental milestones,[12] including infant sensorimotor and language skills.[7]

With respect to children's socio-emotional development, maternal prenatal attachment is thought to facilitate attachment security in the infant by shaping the quality of maternal-infant interactions across the postpartum period.[3,7] A secure attachment then fosters the infant's ability to self-regulate in the face of stressors and has been associated with fewer externalizing (ie, conduct disorders and aggression) and internalizing (ie, depression, anxiety, somatic symptoms, and social withdrawal) problems later in life.[13] Recent work has corroborated this mechanism by showing maternal prenatal attachment to be a significant predictor of emotional competence in children 21 to 31 months old.[12] Though further work is needed to elucidate the association between maternal prenatal attachment and child development beyond toddlerhood, maternal prenatal attachment through its effects on shaping early mother- child relationships and infant attachment security may be an important focus of assessment and intervention to improve maternal and child outcomes.

A Role for Child Psychiatry

Child psychiatrists are critical in postnatal interventions to support infants, young children, and their families. Given the emerging literature identifying the importance of maternal prenatal attachment to later infant mental health, we suggest there is an important role for child psychiatrists during pregnancy to assess and promote maternal prenatal attachment which may begin at the level of fostering internal representations of the child during pregnancy, building a foundation for the formation of maternal prenatal attachment. Investing in maternal prenatal attachment during pregnancy marks an earlier point for intervention. For some women, pregnancy may be a time where they are more easily engaged with intervention programs prior to the arrival of their newborn – rather than waiting to introduce postpartum programs when women are navigating motherhood and the needs of their new child and growing family.

Fostering maternal prenatal attachment may pave the way for more optimal mother-child attachment and interactions postpartum with subsequent benefits for the mental health of two generations. Therefore, child psychiatrists may be uniquely positioned to facilitate the development of more effective interventions given their postpartum expertise working with children and their families as well as their familiarity with the downstream impact of early disruptions to the caregiving environment on the developing child. Indeed, while interventions designed to enhance maternal prenatal attachment have been suggested, they have not been extensively studied. One approach has been to ask mothers to count fetal movements to foster a stronger sense of connection with the unborn child, which has had variable success in increasing maternal prenatal attachment.[3,11] Additional programs have focused on facilitating awareness of fetal positions with self-performed abdominal examinations and tactile and verbal interaction with the unborn child.[11] More recently, a randomized controlled trial of 190 pregnant women in Iran utilizing educational sessions on maternal prenatal attachment found a positive benefit to infant mental health, defined as an average of scores of sleeping time, hugging reactions, and reactions to the mother leaving at three-months postpartum.[14] Other modifiable

factors may also shape maternal prenatal attachment, including the use of ultrasound to help visualize the unborn child,[4,11] social support systems (ie, relationships with the father of the baby or perceived closeness with maternal figures),[4] and addressing maternal psychological health to reduce anxiety and depressive symptoms during pregnancy[4] particularly in those with histories of early childhood maltreatment.[15] We believe that child psychiatrists, given their expertise in developmental psychopathology, can play a key role in fostering maternal prenatal attachment through these, and other, approaches with potential opportunities to partner with perinatal healthcare providers in this endeavor, including receiving training in perinatal psychiatry.

Conclusion and Future Directions

Though additional research is needed to determine the clinical utility of maternal prenatal attachment measures for infant mental health, maternal prenatal attachment may serve as an early marker for maternal and child well-being. Increasing attention is also being given to the role of fathers in the form of paternal prenatal attachment, or the connection between a father and his unborn child, a hitherto understudied concept.[3] Involvement of child psychiatrists during pregnancy as a part of either routine care in promoting strong attachment relationships before birth, or intervening in high-risk cases prior to the arrival of the infant, may ameliorate adverse infant developmental outcomes and psychopathology later in life. Therefore, child psychiatrists have an opportunity to play a key role in addressing future child mental health through a relational and preventative lens, starting prenatally, and addressing the wellbeing of at least two generations.

Take Home Summary

Maternal prenatal attachment may have lasting consequences for children's socioemotional development and psychological wellbeing. Child psychiatrists may play a key interventional role during pregnancy to prevent future psychopathology by fostering maternal prenatal attachment.

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The authors have reported no funding for this work.

Disclosure: Drs. Gao, Givrad, and Rutherford have reported no biomedical financial interests or potential conflicts of interest.

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This article was edited by Anne B. McBride, MD.