

Accepted Manuscript

Title: Depression and Parenting: the need for improved intervention models
Depressed parenting

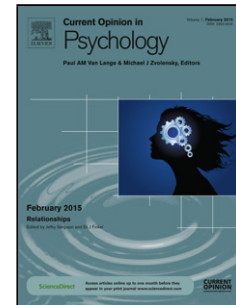
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PII: S2352-250X(16)30127-0

DOI: <http://dx.doi.org/doi:10.1016/j.copsyc.2017.02.008>

Reference: COPSYC 368

To appear in:



Please cite this article as: Megan Galbally, Andrew J Lewis, Depression and Parenting: the need for improved intervention models, <http://dx.doi.org/10.1016/j.copsyc.2017.02.008>

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Title: Depression and Parenting: the need for improved intervention models

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Highlights

- Parental depression is associated with a variety of indicators of poorer quality parenting.
- The established impact on parenting includes increased stress, negative behaviors and potentially a reduction in the quality of the parent-child relationship
- Child developmental outcomes follow from both depression, parenting and their interaction.
- Current treatments of depression have not yet been shown to reduce the impact of parental depression on parenting or child outcomes.

Abstract:

The impact of maternal depression on parenting is well established and there is a clear interaction between maternal depression and parenting that is predictive of child outcomes. The research on paternal depression is more limited but suggests the father's mental health may be an independent risk factor for both parenting and child outcomes. There is insufficient evidence that treatment of depression alone- be it through pharmacological or psychological interventions - is able to substantially reduce the impact of depression on child outcomes. The evidence of interventions aimed at parenting and/or child outcomes in the context of depression is limited and the findings that are available are mixed.

Background

Parental depression has emerged as one of the most significant risk factors for child mental health and emotional wellbeing. While effects of parental depression on children are not inevitable (1) parental depression remains one of the most important modifiable factors in the transmission of mental disorder from one generation to the next.

The relationship between depression in both mothers and fathers, its impact on parenting and child outcomes is complex and remains to be fully elucidated. However, one way of considering this complex question is to focus on three key areas: first, a direct causal relationship based on genetic inheritance of risk genes from parents to offspring, second, the effect of maternal depression in pregnancy through fetal programming and, third, the effect of maternal and paternal depression on parenting behavior, the parent-child relationship and general family functioning (2). Investigating this third point on the role of parenting can itself be divided into three areas of focus:

1. Parenting experience such as parenting stress
2. Parenting behaviors and practices
3. Quality of the parent-child relationship including attachment security.

While much of the research to date has focused on maternal depression, an emerging trend in this area of research is a focus on the impact of *paternal* depression on parenting and child outcomes (3). This suggests that it may be more useful for parental mental health to be conceptualized at a family systems level for the purposes of research and intervention.

Maternal Depression

From Pregnancy to Early Childhood

Maternal depression in pregnancy and following childbirth is one of the most common problems faced by women (4, 5). Initially research focused on effects of postnatal depression (PND) on parenting and child outcomes. For example, a 22-years longitudinal study of the effects of PND led by Murray and Cooper has continued to find independent effects from exposure to maternal PND on outcomes across adolescence and well into adulthood including altered stress reactivity in young adults (6). A mother's own attachment and quality of her own early family relationships may also be important in understanding the relationship between PND and parenting (7). This was further explored in two recent studies; the first showing maternal depression mediated the relationship between maternal attachment style, as measured on the Attachment Style Interview, and the quality of the mother-infant bond (8). While the second study found a woman's own insecure attachment, measured using the Attachment Style Questionnaire in pregnancy, increased her risk of depression in the postpartum period (9).

Driven by evidence that postnatal depression is strongly predicted by antenatal depression, contemporary research has moved beyond a focus on the postnatal impact of depression alone. Antenatal depression has been found to independently predict a range of child and adolescent outcomes. A systematic review including 43 studies found a range of outcomes from emotional, physiological, cognitive and hormonal (10). Given the vulnerability of the fetal period it is not surprising that pregnancy is emerging as a key area of interest in this literature (11, 12).

Emerging research on the significance of the fetal period begs the question about the definition of parenting and when it begins. Actions taken by the mother to provide an optimal intrauterine environment could arguably fall under the definition of parenting (44,45). As such, the womb is a child's first environment and fetal life is the beginning of the parent-child relationship albeit via complex biochemical and psychological interactions. One interesting and relevant aspect to this research is the role of maternal-fetal attachment, as this is arguably the earliest measurement of parenting quality (13). This concept is derived from Cranley (1981) and includes the desire to know the baby, pleasure related to interactions with the unborn child, and most powerfully, a desire to protect the fetus. A recent systematic review identified 16 studies showing that maternal depression has a small but consistent association with a reduced quality of maternal-fetal attachment (14).

Children and Adolescents

Two meta-analyses have found that maternal depression was significantly associated with a range of parenting behaviors across childhood and adolescence, though with relatively small effect sizes for these associations (15, 16). For instance, Lovejoy included 46 studies and found a combined effect size of $r=.22$ for the association between current maternal depression and negative parenting behaviors (15). These behaviours range from negative facial expressions to ignoring, teasing, yelling through to punishing and controlling actions. The second while also finding small effect sizes this study demonstrated the importance of maternal personality characteristics alongside psychopathology. However, while effect sizes for maternal depression and parenting are small, the association between maternal depression and child psychopathology has been found to be strong, suggesting pathways beyond quality of parenting that account for the relationship between maternal depression and poorer child outcomes (17). While these are unclear they may include genetic, neurodevelopmental and wider environmental influences.

One potential mechanism by which depression may impact negatively on child outcomes beyond parenting behavior is through the impact of maternal depression on the quality of the child's environment through parenting practices. Parenting practices that are potentially altered by maternal depression range from breastfeeding, to child and adolescent diet and nutrition, child-rearing traditions through to potential influences on infant/child sleep patterns and reduced capacity to provide adequate stimulation and enriching experiences (10, 11, 15, 18-20).

The role of parenting in child mental disorders has a strong evidence base and hence is often an important component of treatment for a wide range of child and adolescent mental disorders including ADHD, Oppositional Defiant Disorder, and child and adolescent depression (21, 22). In a recent exploration of parenting and child mental disorders maternal depression has emerged as a potential important moderating factor for the relationship between parenting and child outcomes (23). A recent study examining parenting in children with ADHD found maternal depression (either past history or current symptoms) was associated with poorer responses to children's behavior such as higher rates of coercive responses.,

Complicating the research into maternal depression, parenting, and child behavior is the reliance of much of the literature on parental report of parenting behaviors, quality of the parent-child relationship and child outcomes. It has been consistently found that depression alters the reporting of parenting and child outcomes (24). Studies using multi-method and multi-informant or observer-based measures are necessary to address this issue (25).

Effects of Paternal Depression on Child Outcomes

The available research on the effects of paternal depression on parenting and child outcomes is more limited than maternal depression. Two recent meta-analyses have examined the role of paternal depression on parenting behavior and on child outcomes, respectively (3, 26). Both have shown significant effects although the number of studies available was small. One interesting outcome of these reviews was that the impact of paternal depression was greater when a younger child was exposed.

A subsequent study using the Millennium cohort found that depression in fathers after the birth of their child was predictive of later negative parenting behaviors including higher conflict, lower warmth and lower involvement with their child (27). Maternal depression and marital conflict however moderated the association with stronger relationship in those families with high maternal depression and high marital conflict (27). Weitzman et al. drawing on a nationally representative sample within the USA found effects from both maternal and paternal depression on child outcomes but a consistent larger effect from maternal depression. This study also showed a cumulative effect on child outcomes when both parents presented with depression (28).

The Role of Treatment of Depression

This literature shows effects of parental depression from infancy to adolescence (29-32). Chronicity, severity, trajectory and current symptoms of depression all predict parenting behaviors and child outcomes. An interesting aspect of this literature is to consider whether the treatment of parental depression can also improve either parenting or child outcomes.

While there is a plethora of evidence supporting the psychological treatment of depression, the effects of such treatment on child development and parenting is currently unclear and findings have been quite mixed. For instance, studies that focus on a range of psychological treatments for PND, including the use of mother-infant psychotherapy, have shown little to no benefit on either the relationship between mother and child or child developmental outcomes (33-35). However, a meta-analysis of psychological treatment for maternal depression across a range of ages found small to moderate effects for psychological treatment of maternal depression on child developmental outcomes and for pooled parenting stress and marital distress (36). It should be noted only 9 studies were included in this meta-analysis and the studies had considerable heterogeneity across age of child assessed, psychological treatment model and measurement of depression and child outcomes.

Star*D is a large antidepressant treatment study within the USA that has been used to examine the treatment of maternal depression across childhood and outcomes for children. It has shown beneficial effects on child development and also found successful treatment of maternal depression was predictive of child reports of improved maternal warmth (37, 38). Building on these findings from Star*D a further medication trial examined the effects of escitalopram, bupropion and a combination of the two antidepressants on parenting and child outcomes. Findings from this study suggest that escitalopram monotherapy to treat maternal depression was associated with both significant improvements in child depressive symptoms and in parenting functioning (39). Of note was that parenting functioning was measured by maternal self-report and through report from the child. Findings were consistent between parent and child in reporting improvement in parenting over the 12-week treatment trial. A further smaller study has shown a positive impact of antidepressant treatment on parenting stress (40). One study that uniquely examined antidepressant treatment of both

maternal and paternal depression on child outcomes found that treatment of paternal depression resulted in less change in child outcomes than treatment of maternal depression (41).

It is unclear how an antidepressant medication such as an SSRI would have effects on improving parenting and child emotional wellbeing. One suggestive idea developed from animal research suggests that SSRI antidepressants such as escitalopram may be associated with changes in the oxytocinergic system as well as the known effect on the serotonergic system (42). A previous systematic review has found an association between oxytocin and the quality of the parent-child relationship (43). These links remain relatively unexplored in current studies of human parenting.

The ambiguity in findings for treatment of depression alone either with antidepressants or psychological treatment on parenting and child outcomes has led to recommendations that treatment planning for parents should also involve consideration of interventions specifically aimed at improving parenting and child outcomes(11). While there are many intervention models developed that target child development, child mental wellbeing or parent-child relationship, most of these have not been studied in depressed parents.

Pathways from depression to parenting

The relationship between parental depression and parenting includes understanding effects on child outcomes. Key moderators between parental mental health and child mental health clearly will include genetics as well as other important developmental influences. However, it is also clear that mediating factors such as adverse parental relationship including violence and parenting practices influenced by depression will also be important for understanding parental depression and child outcomes. Equally parental attachment, that is the current representation of their own past experience of being parented, may be either a direct predictor or a mediator for the effects of parental depression on parenting (46).

There is yet much still to be understood in this complex and dynamic relationship and a handful of the potential relationships illustrated in Figure 1 all of which offer rich opportunities for inclusion in future interventions.

INSERT FIGURE 1

Conclusion

Parenting can be one of the most enriching of human experiences and contributes to lifelong wellbeing for offspring. Parental depression has consistently been associated with an adverse impact on the experience of parenting, parenting behaviors, and the quality of the parent-child relationship with implications also for child development. It is therefore apparent that investing in understanding the inter-relationship between parental depression, parenting and child outcomes will be crucial to improving social wellbeing into the future.

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* Special Interest

**Outstanding

Figure 1: Illustration of potential relationships between Parental Depression, Parenting and Child Outcomes

