Fathers, fathering and child psychopathology
Beth Barker, Jane E Iles and Paul G Ramchandani

The last few years have seen a steady increase in research addressing the potential influence of fathers on their children’s development. There has also been a clearer acknowledgement of the need to study families as a complex system, rather than just focusing on individual aspects of functioning in one or other parent. Increased father involvement and more engaged styles of father–infant interactions are associated with more positive outcomes for children. Studies of paternal depression and other psychopathology have begun to elucidate some of the key mechanisms by which fathers can influence their children’s development. These lessons are now being incorporated into thinking about engaging both mothers and fathers in effective interventions to optimise their children’s health and development.

Definitions of father involvement
A number of key parenting characteristics and patterns of interaction have been associated with an increased risk of psychological and developmental difficulties in children [1]. These adverse risk associations frequently endure throughout the life course [2]. Whilst numerous studies have examined the influence of specific parenting characteristics on trajectories of child psychopathology, relatively few have addressed the significance of these characteristics in fathers, despite their importance in child development being well-documented [3,4]. Furthermore, much of the existing research has focused on associations between fathers’ absence/non-residence and the development of child psychopathology, rather than specific elements of the father–child relationship [5].

One significant aspect of parenting which has received increased attention in recent years is that of father involvement [6,7]. However, there is substantial variability in the way in which the construct of father involvement is described and conceptualised [8]. Lamb et al. [9] offered one of the most influential and widely-used frameworks to operationalise father involvement [10], the core of which is made up of three primary components: engagement, availability, and responsibility. This model has since been further refined as an appreciation of the multidimensional nature of paternal involvement has proliferated [3,11,12,13]. One newer theoretical model is that of Pleck [14] (see Figure 1).

Pleck’s [14] revised conceptualisation incorporates three primary components (positive engagement activities, warmth and responsiveness, and control) which reflect the chief ways in which paternal involvement is operationalised, and two auxiliary domains (indirect care and process responsibility) which provide clarification of the
responsibility component in Lamb et al.’s [9] original model. Pleck’s revisions reflect an integrated model of paternal involvement. These models are of more than theoretical interest, as the different aspects of father involvement can influence child development in different ways, and are also linked to other wider factors, such as socio-economic status and quality of any parental couple relationship.

Father–child relationship: involvement, sensitivity and attachment security
Numerous studies have demonstrated the potential of father involvement and positive father–child interactions as protective factors for children, with positive effects on offspring development [15,16]. Of significant interest is how differences in paternal involvement and father–child interaction impact upon the development of child psychopathology. Sarkadi et al. [17] conducted a systematic review involving 22,300 children, which demonstrated positive developmental outcomes for children in receipt of high levels of paternal involvement in 22 of the 24 studies included. Although the findings were overwhelmingly positive in terms of the impact of paternal involvement, there was no overall quantification of the size of any effects.

Using data from the UK Millennium Cohort Study (MCS), Kroll et al. [18] found that two measures of father involvement (positive parenting beliefs at age 9 months and frequency of creative play at age 5 years) were associated with fewer behavioural problems in children (by maternal report). Similarly, data from the Avon Longitudinal Study of Parents and Children (ALSPAC) cohort showed that positive attitudes to parenting and security in the paternal role were associated with fewer child behavioural problems at 9 and 11 years [19]. However, in both studies, no such associations were observed for other measures, such as paternal involvement in childcare and domestic tasks, suggesting that psychological and emotional aspects of paternal involvement may be more pertinent in predicting child outcomes.

Further research [20,21] using samples from the MCS found associations between decreased father involvement and an increase in maternal reports of child internalizing symptoms, but not for externalizing or peer problems. Flouri and Malmberg [21] found that father involvement also modified the effect of family socio-economic disadvantage on emotional symptoms. These findings highlight the importance of considering specificity, both in child outcomes and risk, when examining father involvement. However, in view of continuing change in parental roles, care is needed when extrapolating findings from ALSPAC and MCS data to current families given that these cohorts were born between 1990–1991 and 2000–2001 respectively. A strength of

Figure 1
A model of paternal involvement. Figure developed from Pleck’s [14] revised conceptualization of Lamb et al.’s [9] model of father involvement.
these studies is that exposure and outcome measures were reported by different people (father and mother respectively). However, this is still parent-reported, not observational data.

Studies examining father–child interactions in more detail (often through the use of video-recorded interactions) have yielded interesting findings about the influence of fathers. Associations have been consistently found between low levels of paternal involvement and sensitivity and the exhibition of child psychopathology, including externalizing behavioural problems [22–24], and internalizing problems [17]. Parental sensitivity is a widely studied and important dimension, but other aspects of the parent–child interaction, such as engagement and withdrawal, may be as important, or more important, in relation to fathers. For example, in one recent study, where video-recorded father–infant interactions were coded for sensitivity, intrusiveness and remoteness, infants experiencing disengaged interactions with their fathers at age 3 months displayed an elevated risk (odds ratios of 5.3 and 3.3 respectively for the most disengaged and remote fathers) of developing early externalizing behavioural problems at 1 year [8]. Whilst parental sensitivity and engagement are often strongly correlated, this evidence suggests that engagement might be an important additional dimension to consider when studying father effects. Other studies [25] have also found that different dimensions of parent–child interaction can be associated with different outcomes.

One further element which is intertwined with the literature on father involvement and child outcomes is the quality of child–parent attachment. Here again, there are fewer studies examining fathers than mothers [6,26]. Despite the relative paucity of research in this area, there is some evidence that secure father–child attachment may be associated with a decreased risk of externalizing [27] and internalizing [28] forms of psychopathology in children. The associations are generally small in magnitude. In fathers, as with mothers, parental sensitivity is an important predictor of attachment status [29]. However, it does not account for all of it—and so a ‘transmission gap’ [30] also exists for fathers. This is the gap between what can and cannot be explained by examining the determinants of attachment security in parent–infant dyads [31]. A recent meta-analysis from Verhage et al. [32] re-examined the intergenerational transmission of attachment security. Whilst the effect sizes seen for ‘transmission’ of attachment status from fathers to children were similar to those seen for mothers ($r = 0.33$ vs. $r = 0.31$), no single pathway can account for this transmission. The review noted the necessity of integrative models, including factors such as family functioning, parental relationship quality, risk status, and genetic indicators, alongside parental sensitivity, when testing the mechanisms behind attachment transmission.

Given this, when considering research in this area, an appreciation of the complexity of paternal involvement and father–child attachment is important. Many studies have looked at these measures in isolation, rather than as components in a complex web of familial, societal, and biological factors. Given that maternal and paternal involvement within families are positively related to one another [33], there are obvious limitations in studying the father–child dyad alone, without also taking into consideration other familial factors such as maternal involvement [34], relationship quality [34,35], parenting style employed by both parents [36], and the coparenting relationship [37–40]. There are also biological factors to consider, including the fathers’ biological relationship to the child and certainty of paternity, hormonal influences (including testosterone and oxytocin levels), and neurobiological differences (such as variability in the activation of the caudate nucleus) [41]. Other key influences to consider include ethnicity, employment status, and fathers’ educational attainment [42]. These factors can act both as predictors of father involvement, and as potential moderators of any effects of father involvement on child outcomes. Disentangling these factors to examine the true influences of paternal involvement, sensitivity and attachment security, on child outcomes continues to be a challenge within the field.

**Psychopathology affecting fathers**

The potential impact of paternal psychopathology on child development has been the focus of increasing research in the past decade. Paternal depression is probably the most studied problem affecting fathers [43**, although other mental health problems, such as anxiety disorders and alcohol dependence also potentially impact children’s development. Paternal depression is consistently associated with approximately a doubling of risk of child emotional and behavioural problems in studies across many countries [44–48]. Although the patterns of risk are broadly similar to those seen with maternal psychopathology, there are some differences. For example, some, though not all, studies show that boys may be more affected by paternal depression than girls [49], and studies suggest that paternal anxiety may confer a greater risk for anxious behaviour in children, than maternal anxiety [50].

This area of research is also important as it offers insights into potential mechanisms of risk for the development of child psychopathology. There is still limited research in this area, but three key environmental mechanisms are set out in Figure 2. These are: the impact of psychopathology on the father’s parenting and the father–child relationship; the impact on the parenting couple’s relationship, in particular increased conflict; and the impact...
on the partner (most commonly the mother) and thus on the partner’s mood and interaction with the child. Each of these three factors is known to be associated with an increased risk of adverse psychological outcome in children.

A recent population cohort study in the UK [51] suggested that effects on couple conflict and maternal depression combined accounted for two-thirds of the association seen between paternal depression and adverse child outcome (reducing the direct effect of paternal depression from 0.168 (95% CI 0.133–0.202) to 0.058). This study did not find a large effect of depression on a father’s engagement with his child, but was limited by not having detailed measures of the quality of the father-child relationship. Other research, albeit smaller scale [52,53], has suggested that paternal depression is associated with a less engaged, less positive style of father-infant interaction, which in turn predicts increased behavioural problems in young children [8,54].

Lessons for interventions
It is clear from the studies discussed here, and a wider body of research, that fathers can fill a unique and distinctive role in their children’s lives and that factors that impact upon the quality and amount of involvement fathers have with their children can affect children’s long-term development. Fathers are often not included in parenting programmes and provision of services to children. There is limited empirical research regarding the inclusion of fathers in interventions of this kind. However, there is evidence suggesting that key aspects of fathering can be positively affected by interventions [55] and that there is potential for strong beneficial effects if fathers are included, although there should also be careful consideration of potential negative effects, such as reduced benefit of interventions for mother’s parenting [56]. A range of newer, innovative approaches to engaging fathers in parenting are needed and are only now being explored and evaluated [16**].

As we stated at the beginning, fathering does not occur in isolation and rather than considering father-interventions alone, a more fruitful approach is likely to be through investing in family-based approaches. However, these need to be approaches that specifically seek to engage fathers/partners, and which adapt their delivery to actually allow for that. This involves a careful – and challenging – consideration of their approach to session timing, venue and format, the form and wording of communication with families, and the focus of interventions. Engaging fathers in research, and in interventions, can present challenges because of reduced availability or the sometimes greater reluctance for men to engage with research and healthcare services. However, actions of researchers and healthcare providers can mitigate these effects. Positive engagement is more likely when approaches are actively targeted at fathers from the start, use images and language that emphasize the importance of their involvement, and allow for appointments outside of conventional working hours. Using these, and other, approaches makes it possible to maximise the positive engagement of fathers to enhance the beneficial outcomes for their children.

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Figure 2
Proposed environmental mechanisms of risk transmission from fathers to children. Developed and adapted with permission from Ramchandani and Psychogiou [57].
References and recommended reading

Papers of particular interest, published within the period of review, have been highlighted as:

- of special interest
- of outstanding interest


This study synthesises research examining the intergenerational transmission of attachment in a series of comprehensive meta-analyses, accounting for publication bias and a “decline effect”. Potential moderators, including parental education, are examined. All analyses confirmed intergenerational transmission of attachment. Contrary to previous findings, effect sizes for transmission were similar in mothers and fathers. This could be demonstrative of the secular changes in the role of parents and the more equal division of care tasks—the authors emphasise the need for further research in this area.

33. Planalp EM, Braungart-Rieker JM, Lickenbrock DM, Zentall SR: Trajectories of parenting during infancy: the role of infant...
temperament and marital adjustment for mothers and fathers. *Infancy* 2013, 18:156-159.


Multiple father, mother, and child determinants were examined, in order to test which predictors were more robust in their relation to trajectories of father involvement. This highlighted that fathering role identification predicted increased paternal caregiving and play behavior over time at a faster rate. The study also indicated the interacting effects of some of the key predictors.


This systematic review synthesizes and critically evaluates a collection of studies investigating the outcomes for offspring of fathers with paternal depression, in the antenatal and postnatal stages, and during offspring adolescence. Findings indicate a robust association between paternal depression and an increased risk of internalizing and externalizing behaviors, an association which is strengthened during early childhood, emphasizing the sensitivity of this period of development.


The findings of this population-based cohort study suggest that paternal depression during the postnatal period exerts its influence on children's subsequent behaviour, primarily through an effect on family functioning (couple conflict and maternal depression). Approximately two-thirds of the main effect of paternal depression is mediated through these two factors. This emphasises the importance of supporting whole families when one parent is presenting with depression.


