

Fathers' role in the etiology, prevention and treatment of child anxiety: A review and new model

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Abstract

Fathers have been neglected in investigations of the development, prevention, and treatment of anxiety and anxiety disorders in children and adolescents. This review provides a historical background of what is known about fathers' roles in the etiology of anxiety problems and provides evidence from bottom-up, top-down, and cross-sectional correlation studies of the connections between fathers' and their children's anxiety. Treatment and prevention programs are discussed in terms of the limited findings regarding fathers' involvement in treatment for children's and adolescents' anxiety problems. Finally, a model is presented to show the unique ways in which mothers and fathers are involved in the development of anxiety disorders in their children. Future directions for research in this area are highlighted.

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The anxiety level of children in the United States has increased dramatically over the last 40 years (Twenge, 2000), and so has the absence of fathers in the family (from 6% in 1960 to 24% in 2000, Cabrera, Tamis LeMonda, Bradley, Hofferth, & Lamb, 2000). There is an abundance of evidence on the negative influence of paternal absence (e.g., on children's school achievement, aggression in boys, and heightened risk-taking behaviors; McLanahan & Teitler, 1999), but the role of paternal presence or absence in child anxiety has not received much interest yet. Early theorists, including psychodynamic and attachment theorists, have suggested that paternal presence and accessibility might likewise offer the child a sense of security (Lamb, 1977).

Interest is growing in the way parents influence the development of anxiety in children who are vulnerable. Numerous parental factors have been identified that may have an impact on child anxiety: modeling, encouragement, overprotection, intrusiveness or control, acceptance, support, rejection, promotion of avoidance, parental interpretations, validation of emotions, expressed emotion, attachment, marital conflict, and parental psychopathology as an underlying factor (see the reviews of Bögels & Brechman-Toussaint, 2006; Ginsburg & Schlossberg, 2002; Rapee, 1997; and Wood, McLeod, Sigman, Hwang, & Chu, 2003). Most models concerning parental factors in child anxiety do not take into account that fathers and mothers might influence children's anxiety in *different* ways. It is likely that fathers' biological and socially reinforced masculine qualities predispose them to treat their children differently than do mothers. Therefore, different behaviors or attitudes in fathers than in mothers could promote child anxiety or could protect a child against anxiety. For example, since fathers more often have the role of providing limits on the child and mothers of providing comfort, paternal unlimited behavior and maternal lack of comfort giving could produce child anxiety. This process might put a child at increased risk for anxiety, if one parent is not able to compensate for the dysfunctional behavior of the other parent.

The compensating and reinforcing effect that one parent can have on the other parent has also not been studied or modeled yet in the area of child anxiety. To illustrate, in 1943 Levy described a typical cultural family pattern of submissive fathers dealing with overprotective mothers who completely monopolised the child, "These fathers {...} readily adapted to such complete surrender of the paternal role" (p. 151). Another area of interest on the role of the father versus the mother in the etiology of child anxiety concerns the developmental stage of the child. Fathers and mothers might have different roles and might vary in importance depending on the age of the child. A final area to take into account is the gender of the child. That is, fathers and mothers might have different effects on their sons and daughters in relation to coping with fear.

Fathers continue to be ignored in research related to many types of developmental psychopathology (Phares, Lopez, Fields, Kamboukos, & Duhig, 2005), including anxiety. To illustrate, in a recent meta-analysis on observational studies concerning the role of parental control in child anxiety (Bruggen, Bögels, & Stams, submitted for publication), 22 studies were identified, 13 of which concerned mothers, 8 concerned a primary caregiver or mixed father and mother sample where mothers were typically over-represented, and only 1 study concerned fathers. Fathers, thus, have been a neglected group in the study of child anxiety, while mothers have received both blame and credits. Why have fathers largely been ignored in research into the intergenerational transmission of anxiety disorders? It may be, because of the untested assumption that mothers matter more than fathers. The data from studies involving mothers and fathers, however, do not seem to support this assumption on an empirical level, as we will show in this review.

The second assumption about ignoring fathers is that, because mothers spend more time with their children (Lamb, 2000), they have more impact. However, there is no evidence linking the amount of parental involvement with desirable child outcome, suggesting that the quality rather than the quantity of involvement is most influential (Amato & Rezac, 1994). In addition, much of the influence of fathers and mothers on children's coping with anxiety might not go through direct parent-child interaction. For example, a father who is away from home a lot because of work and travel might give a positive and dynamic model to his child in how he explores the world, demonstrating that the world is a safe place to be. In addition, father involvement in raising children has increased (Pleck, 1997).

The third reason why fathers have been ignored in research on child anxiety is that mothers are thought to be easier to involve in research (Phares & Compas, 1992; Phares, Fields, Kamboukos, & Lopez, 2005). The studies including

both fathers and mothers almost always suffer from a generalizability problem concerning the role of the father, because there are usually missing data on the fathers. Such missing father data must be regarded as “systematic”. The missing fathers might be either anxious or otherwise avoidant, might view themselves or are viewed by their partner as a less important parent, might be too busy to show up, are divorced, or otherwise absent or not accessible for their children. Even if only 10% of the fathers are missing (and the few studies on both parents tend to have missing data on 30–50% of the fathers) the conclusions might have been truly different if the fathers that do make a difference would have been involved. Unfortunately, not including or only partially including fathers might stand in the way of the growth of knowledge on the intergenerational transmission of anxiety and anxiety disorders.

In conclusion, fathers have been neglected in research on the role of parents in the development of child anxiety disorders. Parental rearing models related to child anxiety that have been built predominantly on mothers’ roles, have not taken into account the different roles that fathers and mothers may play for their children, did not address gender and age of the child in relation to the paternal and maternal role, and have been tested predominantly on mothers. The present review will give an overview of research concerning the role of the father in the development, treatment and prevention of child anxiety, and will present a first model of the paternal role in child anxiety disorders. In the first part of the article, we will review research on the role of the father in child upbringing in general, which is relevant in the context of child anxiety. In the second part, research is described about the role of fathers and fathers’ psychopathology in the development of childhood anxiety and anxiety disorders. In the third part, research on parent involvement in general and father involvement in particular in the treatment of children with anxiety disorders is highlighted. Finally, a preliminary model on the different roles of the father in the development, prevention and treatment of child anxiety is presented, and directions for future research, based on this model and on the gaps in our current knowledge, are given.

1. Fathers’ role in normal development in children: do fathers matter?

We review four aspects of the paternal role, which seem relevant in the context of understanding fathers’ roles in the development of child anxiety: (1) play, (2) attachment, (3) closeness/involvement, and (4) their indirect role through their influence on the mother.

1.1. Paternal play

Play seems to be a highly important dimension of fathering in infancy and childhood. Lamb (1977) found that in the first year of life, mothers hold their infants more for care taking purposes, whereas fathers hold their infants more for play. Despite the fact that with age, mothers hold their infants less for care taking, no increase was observed in mothers’ holding for play. Other studies confirm that fathers spend a larger portion of their time with their infant in play situations than do mothers (38 versus 26%, Kotelchuck, 1981). Compared to the more gentle and comforting style of the mother, paternal involvement is more active, exciting, stimulating, challenging, teasing, and occasionally arouses also discomfort and anxiety in the infant (Burlingham, 1973; Labrell, 1996). Also, fathers tend to engage infants in non-object mediated interaction, which is more physical, exciting and unpredictable (see Paquette, 2004). Probably as a result of the more play-oriented behavior of the father, infants in the first year of life responded more positively to father–infant play than to mother–infant play (Lamb, 1977), and more two year olds engage their father in play on reunion than their mother (Lamb, 1976). In sum, these studies suggest that fathers’ engagement with their infants is more play-oriented and exciting whereas mothers’ engagement is more care-oriented and soothing, and as a result, children often prefer their father as a playmate.

Having established that fathers interact in a more playful, physical, unpredictable and exciting way with their infants, the question arises as to what specific function this play may have for children. The role of paternal games may be to experiment with experiences outside the family, which are relevant for socialization of the child. In line with this idea, paternal exciting and physical games, so called “Rough and Tumble” play, were found to foster the development of competition without aggression in children (Paquette, Carbonneau, Dubeau, Bigras, & Tremblay, 2003), and contribute to the development of autonomy and exploration (Ladan, 1985). Probably as a result of the more play-oriented behavior of fathers, in response to maternal care the infant is more passive, while paternal care produces more active reactions (Burlingham, 1973). Fathers’ involvement as a play partner with pre-term infants was found to predict their child’s IQ at 3 years, after correcting for relevant demographic variables such as education (Yogman, Kindlon, & Earls, 1995). Indirect evidence for the function of fathers as playmates with respect to coping with anxiety comes from studies showing that children of active, highly participatory fathers adapted readily to unfamiliar laboratory situations, even when left

with a stranger (Kotelchuck, 1976), and that children with two active caregivers show less separation protest than those whose mother alone functions as primary caregiver (Kotelchuck, 1976; Spelke, Zelaza, Kagan, & Kotelchuck, 1973).

Somewhat later in the child's early development, paternal play, more than maternal behaviors, predicted social competence, peer acceptance, and popularity in children (see Parke et al., 2004, for an overview). Those fathers who exhibited high levels of physical play with their children had children who received the highest popularity ratings.

More evidence for the function of fathers' play comes from the work of Bourcois and Ricoud (1997, in Paquette, 2004), showing that French children from involved parent couples with differentiated roles (mother as a caregiver and father as a playmate), have better social skills, are better prepared for competition and cooperation, and are less aggressive than involved but undifferentiated parents.

In sum, paternal play seems to promote an active, competitive, autonomous, and curious attitude in children, has a beneficial effect on children's cognitive and social development, and seems to buffer early separation, stranger, and novelty anxiety. Note however that the direction of this relationship is unclear and may well be bidirectional: playful fathers may promote social competence and prevent anxiety in children, and socially competent and confident children may increase positive father involvement in the form of paternal play.

1.2. *Father–child attachment*

Father–child attachment is a second relevant dimension of fathering in infancy and childhood. Attachment is extremely stable over time (Waters, 1978). The idea that fathers are less sensitive than mothers in the early baby–parent interaction is disconfirmed in research of Lamb (1982) which showed that fathers are capable of such sensitivity, but do it less often. Research demonstrates that children are often differently attached to father and mother: secure to one but not to the other, suggesting that mothers' behaviors are not a general determinant of the security of all relationships, and that the way each parent interacts with the infant determines the security of the relationship with the parent (Lamb, 1980). There is evidence, however, that infant's attachment classification to mother and father are related (see the meta-analysis of Fox, Kimmerly, & Shafer, 1991). From these data it seems plausible that infants' temperament and being more object- and less person-directed leads to similar classification to mother and father. In terms of development, paternal attachment increases from the first to the second year of the infants' life, and Earls (1977) suggested that fathers' effectiveness in determining a secure attachment relationship during the second year of their child's life is associated with the establishment of autonomy in the child. Moreover, Lamb (1980) reasoned that the father–child attachment affects the child's orientation to novel social situations.

Evidence for a specific role of father–infant attachment in infants' coping with social or stranger anxiety comes from a study of Lamb, Hwang, Frodi, and Frodi (1982). They showed that security of the father–infant, but not the mother–infant attachment, was related to infants' sociability with adult strangers at 11 and 13 months of age. This association between paternal secure attachment and sociability with strangers was independent of whether the infant came from a traditional or non-traditional (with a more involved father) family. In line with the findings of Lamb et al. that paternal attachment is important in approaching novel social situations, children's representation of child–father attachment, more than child–mother attachment, was related to teacher-reported anxious/withdrawn behavior in children (Verschuere, 1996).

Grossman et al. (2002) introduced a new type of attachment that would be more applicable to the father–child relationship: sensitive play attachment. They define sensitive play attachment as when a parent or caregiver “provides security through sensitive and challenging support as a companion when the child's exploratory system is aroused” (p. 311). Interestingly, father–infant sensitive play attachment was a better predictor of adolescents' secure attachment to peers than early mother–child attachment.

To conclude, secure infant–father attachment but not infant–mother attachment seems to be related to autonomous behavior and to approach rather than avoidance of new social situations, and to later peer attachment security of the adolescent. This pattern suggests that paternal attachment might be an important protective factor in decreasing the likelihood of the development of child anxiety.

1.3. *Father involvement*

The third line of research into fathers' influence on their children's emotional life relates to how involved they are in their child's life and, related, how close they are to their child. Paternal involvement is typically measured through child-, mother-, or teacher-perception, with items like “spends time with you, talks through your worries with you, takes

an interest in your school work, helps with your plans for the future”, and paternal closeness with items like “how well do you feel that your father understands you”, “how much do you trust your father”.

Frascaroli (2004) selected families with their firstborn (age 12–24 months) in which fathers were either highly involved ($n=20$) or less or not at all involved ($n=17$). Infants of involved fathers were more sociable with their father, mother, and a stranger, during the Ainsworth “strange situation” paradigm. In a longitudinal study, Flouri and Buchanan (2003a) demonstrated that mothers’ report of father involvement in non-intact families when children were 7, had a stronger effect on adolescents’ behavior and emotional problems than mothers’ involvement, irrespective of whether mother involvement was low or high. Another study by the same authors (Flouri & Buchanan, 2003b) also showed that father involvement, now measured by adolescents’ report, had a stronger effect on adolescents’ well-being than mother involvement, independent of family disruption. In the same line, high involvement and closeness between fathers and adolescents was found to protect adolescents from emotional distress in intact families (Harris, Furstenberg, & Marmer, 1998). Amato and Rezac (1994) found that perceived higher closeness to fathers made an independent contribution to young adult’s lower distress. Interestingly, frequency of contact with the father per se did not contribute to young adults’ well being, so the quality of or perception of father involvement seems essential in protecting against stress. Finally, for adolescent boys’ emotional well-being, the effect of father involvement was strongest in cases where bullying was experienced most (Flouri & Buchanan, 2002).

Having established that father involvement and closeness are as important and in many adolescent studies even more important than mother involvement for children’s well being, this raises the question of what mechanisms are involved. Several studies found a relationship between father involvement and children’s perceived or actual competence in several domains. First, with respect to general self-esteem, father–adolescent relatedness was found to be more important than mother–adolescent relatedness in predicting adolescents’ self-esteem (Allen, Hauser, Bell, & O’Connor, 1994). Secondly, Wagner and Phillips (1992) demonstrated a specific relationship between paternal actual behaviors that seem related to involvement and closeness and child’s perceived competence. While third-grade children had to do a solvable and unsolvable task, observed paternal but not maternal warmth and encouragement was related to children’s perceived trait academic competence, during the solvable task and even more so during the unsolvable task. During the unsolvable task, children’s perception of competence was in turn related to their emotional restraint and self-reliant behavior in interaction with their father. Thirdly, actual paternal behaviors, related to the concepts of involvement and closeness, were found to be associated with actual greater child competence as rated by the teacher (Mattanah, 2001). Fathers’ but not mothers’ observed warmth during a series of parent–child interaction tasks, and fathers’ but not mothers’ encouragement of psychological autonomy as reported by their child, correlated with teacher-rated greater child academic competence. Mattanah (2001) found this specific father effect with respect to warmth and psychological autonomy to be unrelated to child gender. Finally, within the Japanese culture, father lack of involvement is thought to hinder child persistence (Crystal, 1994). In sum, child-perceived and actual academic competence, and persistence to complete difficult tasks, all are related to father involvement with the child, and might explain the stronger association between fathers’ rather than mothers’ involvement in older children’s well being.

One alternative explanation for the more important role of father involvement than mother involvement for the adolescents’ and young-adults’ well-being, specifically in post-divorce families, is that fathers’ relationships with their children suffer more from low marital quality and divorce than mothers’ relationships (Booth & Amato, 1994). In addition, opposite sex ties deteriorate more than same sex ties after divorce, which might explain why several studies found that father involvement is just as important for girls as for boys. Interestingly, most of the studies on father involvement and closeness did not find specific child gender effects, that is, fathers’ roles were not more pronounced in their sons than daughters. Some other studies however, predicting young adults’ distress, did detect gender differences. Teachers’ perceived father involvement at age 16 protected against psychological distress in young adult women, but not in young adult men (Flouri & Buchanan, 2003a,b). In contrast, paternal relatedness overwhelmed the effect of maternal relatedness, and was the more important predictor of sons’ psychological distress (Barnett, Marshall, & Pleck, 1992), whereas maternal relatedness overwhelmed the effect of paternal relatedness in predicting daughters’ psychological distress in young adulthood (Barnett, Kibria, Baruch, & Pleck, 1991). Also, in a study by Wagner and Phillips (1992), fathers were found to be more pressuring towards low perceived competence in girls than in boys.

Taken together, there is strong evidence from cross-sectional as well as longitudinal research to suggest that paternal closeness and involvement, more than maternal closeness and involvement, promotes competence and protects against psychological distress in adolescents and young adults. This paternal involvement effect is irrespective of high or low maternal involvement, irrespective of divorce, and appears to be irrespective of child gender.

1.4. *The indirect role of the father*

The fourth way in which fathers play a role in the development of their infants and children is indirect, through their marital relationship with the mother and through the support they give to the mother and the family. This support might be emotional or behavioral, but also financial.

Fathers affect infants indirectly through their influence on the children's mother (Lamb, 1980). Fathers who support mothers enhance the quality of mother–child relationship, and if fathers are unsupportive, the child–mother relationship is of lower quality (Cummings & O'Reilly, 1997). In the same way, an affectionate marital relationship is associated with better maternal sensitivity (Pedersen, Anderson, & Cain, 1977, in: Lamb, 1980), and fathers are found to contribute to their children's psychosocial adjustment through emotional support of their wife (Clarke-Stewart, 1978). Also, maternal perceptions of greater paternal emotional support were related to a less controlling and aggravated attitude towards their one-year old baby (Brunelli, Wasserman, Rauh, & Alvarado, 1995). Boys experience their mothers as exerting more hostile control and withholding nurturance if their fathers had more traumatic Holocaust experiences (Last & Klein, 1984). This study provided evidence that fathers' psychopathology indirectly influences the mother–child relationship, although the mechanisms through which this process might occur were not explored.

Next to fathers' level and quality of support, father absence or withdrawal also has its repercussions on the mother–child relationship. A review on the role of the father in the Japanese culture (Crystal, 1994) concluded that the Japanese father's emotional distance from the mother causes her to turn to the child with inordinate expectations of companionship and intimacy. In the same line, mothers in families with absent fathers (irrespective of divorce or death) were overprotective and solicitous of their pre-adolescent daughters, and had more conflict and were more inconsistent with their adolescent daughters (Hetherington, 1972). Husband's withdrawal as observed in the patterns of communication between spouses-to-be, forecasted attachment insecurity in their child (Howes & Markman, 1989).

Not only do fathers influence the mother–child relationship, mothers also influence the father–child relationship. This point is illustrated by two studies in which more paternal involvement with their babies was related to more mother–father engagement (Belsky, Gilstrap, & Rovine, 1984; Lamb & Elster, 1985). In contrast to the previously mentioned findings that fathers did influence the quality of the mother–child interaction (Cummings & O'Reilly, 1997; Clarke-Stewart, 1978; Last & Klein, 1984), in the studies of Belsky et al. (1984) and Lamb and Elster (1985) maternal involvement in these young babies was unrelated to mother–father engagement.

In sum, fathers influence the quality of the mother–child interaction and, as such, the child's adjustment, by being supportive or non-supportive towards their child's mother.

1.5. *Conclusion*

Overall, there is ample evidence from cross-sectional and longitudinal research in infancy, childhood, and adolescence suggesting that the father has an important and unique role in child development; a role that is different from that of the mother. The father's role can be characterized by play, challenge, risk taking, encouraging independence, and, later in development, by helping the child making the transition to the outside world. Moreover, fathers are important in their role of supporting mothers and the family and through their marital relationship with the mother. Finally, fathers' unique role is not only important during childhood, but continues to be important in children's young adult years.

2. **The role of the father in child psychopathology and child anxiety disorders**

2.1. *The role of the father in child psychopathology*

A review of Phares and Compas (1992) pointed out substantial evidence for a relationship of paternal psychopathology and other paternal factors, such as paternal-child interaction, with child externalizing disorders. To illustrate, Amato and Rivera (1999) found that in a large study of 994 households, higher paternal involvement was associated with less behavior problems as rated by mothers in their children, even after correcting for maternal involvement. This study demonstrated that fathers indeed make a unique contribution to their offspring's externalizing problems. Less evidence exists for a relationship with child internalizing disorders, such as depression (Connell & Goodman, 2002). One possible reason that more evidence exists for a paternal role in child externalizing than child

internalizing disorders is that simply more research has been conducted in the externalizing domain. For example, top-down studies investigating the offspring of fathers with psychopathology, have concentrated predominantly on psychopathology that is prevalent among men, such as alcoholism. Children of alcoholic fathers are consistently found to be at risk for a wide variety of emotional and behavioral difficulties. Parental depression is probably the most widely investigated form of parent internal psychopathology affecting offspring's functioning. The majority of the studies on paternal depression, reviewed by Phares and Compas (1992), found that children of depressed fathers, just like children of depressed mothers, are at risk for behavior and psychological maladjustment. More recently, these findings were confirmed in a meta-analysis of studies of depressed mothers and fathers (Kane & Garber, 2004). Thus, children with a depressed father are at risk for the development of psychopathology.

From older studies, there is also some evidence for a specific role of the father in child depression and suicide. That is, Poznanski, Krahenbuhl, and Zrull (1976) found that father-child rejection and neglect predicted ongoing depression in children. In the same line, paternal death and neglect correlated better with child suicide than maternal factors (Pfaffenberg & Asnes, 1966). More recently, research with families of married parents found that paternal depression predicted teacher-rated adolescent anxiety (McCombs Thomas, & Forehand, 1993). Maternal depression was related to youth depression, anxiety, and externalizing disorders, whereas paternal depression was related to external but not to depressive and anxiety disorders in youth (Brennan, Hammen, Katz, & Le Braque, 2002). Mezulis, Shibley Hyde, and Clarke (2004) studied the role of paternal and maternal depression on child internalizing symptoms, as rated by the teacher, in a longitudinal community sample of children followed in their first 4 years. They found that maternal depression, but not paternal depression, predicted more child internalizing symptoms. On the other hand, paternal depression exacerbated the effect of maternal depression, but only in fathers who spent a lot of time with their children. Surprisingly, lower levels of self-reported paternal warmth and higher levels of self-reported paternal control were associated with *less* internalizing symptoms in infancy, suggesting that the relationship between paternal rearing and child internalizing behavior is different from the relationship between maternal rearing and child internalizing problems. No effects of father depression or rearing reports on child externalizing behaviors were found.

In conclusion, there is ample evidence that paternal psychopathology and other paternal factors, such as paternal-child interaction, are related to child psychopathology, such as depression. The fact that there seems to be more evidence for a role of the father in externalizing problems of children may simply reflect the larger number of studies that have been directed to fathers in the externalizing area.

2.2. *The role of the father in child anxiety and anxiety disorders*

Three types of studies are reviewed on the relationship between paternal factors and childhood anxiety and anxiety disorders: 1) bottom-up studies on differences between fathers of anxiety disordered or highly anxious children versus normal children, 2) top-down studies on characteristics in offspring of fathers with anxiety disorders, and 3) correlational (longitudinal and cross-sectional) studies on the relationship between paternal factors (like anxiety, rearing style, parent-child interaction, paternal support of the mother) and child anxiety symptoms.

2.2.1. *Bottom-up studies on fathers of anxious children*

The first bottom-up study on anxiety disorders in parents of children with anxiety disorders focused on mothers (Last, Hersen, Kazdin, Francis, & Grubb, 1987), and found an elevated rate of anxiety disorders in mothers of anxiety-disordered children. In a second study, Last, Hersen, Kazdin, Orvaschel, and Perrin (1991) investigated the rate of anxiety disorders in all relatives (parents and siblings lumped together) of children with anxiety disorders. They found elevated rates of anxiety disorders in relatives, which could be attributed mainly to more anxiety disorders among *male* relatives of children with anxiety disorders compared to control children. This pattern of findings provides indirect evidence for a specific elevated risk for anxiety disorders in fathers of children with anxiety disorders. A recent study by Cooper, Fearn, Willets, Seabrook, and Parkinson (2006) studied the presence of current and lifetime anxiety disorders in mothers and fathers of children with anxiety disorders. They found an elevated risk of current maternal, but not of current paternal anxiety disorder. There was, however, an elevated risk of paternal lifetime anxiety disorder, that is, whether fathers have at some point in their life met criteria for an anxiety disorder. The elevated risk for paternal lifetime anxiety disorder was only significant for lifetime social phobia, the most prevalent anxiety disorder among men. Moreover, the elevated risk for lifetime anxiety disorders in fathers was higher than that in mothers (threefold versus twofold). Note also that only 60% of the fathers were reached for the study, so a systematic bias is possible. That

is, current anxiety disorders in fathers could have been underestimated since current socially phobic fathers might have avoided participation in the interview.

So although there have been few studies on paternal anxiety disorders in children with anxiety disorders, from the existing evidence it can be concluded that children with anxiety disorders are more likely than children in control groups to have parents with an anxiety disorder. There seems to be some evidence for a specifically elevated risk for a father with a lifetime anxiety disorder, but not for a father with a current anxiety disorder.

We identified four bottom-up studies that investigated actual child-directed behavior of fathers of anxious versus control children. [Hummel and Gross \(2001\)](#) compared the verbal behavior of fathers versus mothers of socially anxious versus not socially anxious children during a puzzle task, and children's responses towards their fathers versus mothers. They found that mothers spoke more than fathers, irrespective of children being socially-anxious or not, whereas children spoke as much to their fathers as to their mothers. Both fathers and mothers of children with social anxiety used more negative and less positive feedback, and less explanations and suggestions. [Greco and Morris \(2002\)](#) measured only fathers and found fathers of high socially-anxious children (measured by father report of child social anxiety) to display more *physical* control during an Origami task. However, fathers did not display more verbal control or rejection than fathers of low socially anxious children. [Hudson and Rapee \(2002\)](#) assessed paternal combined verbal and nonverbal over-involvement during a complex puzzle task. Though fathers were more involved than mothers overall, no differences in involvement between fathers of anxiety-disordered and control children were found. In contrast, mothers of children with anxiety disorders were more over-involved than mothers of control children. One other study found that both mothers and fathers of anxious children showed higher rates of controlling behavior than mothers and fathers of children in a normal control group ([Barrett, Fox, & Farrell, 2005](#)). Interestingly, these observational results are counter to parents' self-reported overprotection, where no differences are found between parents of clinical versus non-clinical groups ([Hudson & Rapee, 2005](#)).

From these few observational bottom-up studies it can be concluded that fathers of anxious children are more controlling, particularly in a physical way, and less helpful in guiding their child with explanations and suggestions. Of the three studies that measured both mothers and fathers, two found that both mothers and fathers are more controlling towards their anxious child, one study ([Hudson & Rapee, 2002](#)) found only evidence for mothers' controlling behavior. Note however that in the [Hudson and Rapee \(2002\)](#) study, only two-parent intact middle-class families were included, leaving the possibility open that the anxious fathers were under-represented, as they are more likely to be divorced or from lower SES (e.g. [Caspi, Elder, & Bem, 1988](#)).

Three bottom-up studies relying on self-report were found that are relevant in the context of understanding the role of the father in child anxiety. First, [Perry and Millimet \(1977\)](#) found that highly anxious children believed that they got along better with their mothers than with their fathers, whereas low-anxious children did not report a difference between mothers and fathers. In the same vein, fathers of high-anxious children worried more about coping with adolescence, felt more inadequate as a parent, and felt that they could not reach the child as readily as the mother, compared to fathers of low-anxious children. Second, [Messer and Beidel \(1994\)](#) found that fathers of anxiety-disordered children reported more obsessive-compulsive as well as depressive symptoms, whereas no differences in self-reported psychiatric symptoms were found between the mothers of anxiety-disordered children and normal controls. Fathers' obsessive-compulsive symptoms were related to less child temperamental flexibility and lower family cohesion. Obsessive-compulsive symptoms may indicate rigidity and even lack of playfulness. Third, [Monck, Graham, Richman, and Dobbs \(1994\)](#) found that the quality of the marriage, measured by an interview with mother and daughter, was independently associated with the presence of anxiety disorders and depression in a community sample of girls aged 15–20.

To conclude, there is evidence from bottom-up studies that fathers of anxious children are more (physically) controlling, give less guidance, and are more rigid, and parents of anxious children have more marital problems.

2.2.2. Top-down studies on children of anxious fathers

Top-down studies investigating the psychopathology of offspring of anxiety-disordered or high-anxious parents typically combine father and mother with an anxiety disorder into a parent anxiety disorder group (e.g. [Beidel & Turner, 1997](#); [Biederman, Rosenbaum, Bolduc, Faraone, & Hirschfield, 1991](#); [Merinkangas, Dierker, & Szatmari, 1998](#); [Turner, Beidel & Costello, 1987](#)). Since anxiety disorders are more common among women, except for social phobia, anxiety disordered parent groups consist predominantly of mothers with anxiety disorders. Results of these studies indicate that children of anxiety-disordered "parents" have a heightened risk for anxiety disorders, but no conclusions can be drawn from the existing studies on whether maternal or paternal anxiety disorder forms a greater

risk for the development of psychopathology in children. There are a few studies that explored the specific role of paternal anxiety disorders. Fathers', but not mothers' post-traumatic stress disorder and depression predicted whether children developed post-traumatic stress disorder after an earthquake (Kiliç, Özgüven, & Sayil, 2003). In contrast, maternal, but not paternal anxiety disorders, after correction for parental depression, predicted child anxiety disorders in a high-risk sample of depressed mothers (McClure, Brennan, Hammen, & Le Brocque, 2001). The risk for child anxiety disorders was two-fold if mothers had anxiety disorders. The risk for the development of child anxiety disorders was comparable for male and female offspring. Note however that this study used a pre-selected sample, based on depression of mothers and not of fathers. The results of this study do not really add to our understanding of the role of fathers' anxiety disorders for two reasons. First, given the high co-morbidity between anxiety and depressive disorders in adults, maternal anxiety disorders may have been over-represented in this study compared to paternal anxiety disorders. Second, because the sample was pre-selected on depressed mothers, any father effects are likely related to a protective or ameliorating effect, rather than a pure father effect on the development of anxiety in children.

There are a few studies that measured fathers' anxiety rather than anxiety disorders defined in a categorical manner. In a study of a sample of children with Attention Deficit/Hyperactivity Disorder (ADHD) and Oppositional Defiant Disorder (ODD), anxiety in fathers uniquely predicted more conflict in father–son interactions above and beyond the severity of child ADHD and ODD symptoms (Edwards, Barkley, Laneri, Fletcher, & Metevia, 2001). In the same vein, social anxiety in the father, but not the mother, was significantly correlated with less warmth as perceived by the child (Bögels, van Oosten, Muris, & Smulders, 2001). With respect to parent-reported warmth and positive involvement, only an association with mothers' and not with fathers' greater anxiety was found in a sample of children with ADHD (Kashdan et al., 2004).

In sum, to this date we know almost nothing about the offspring of fathers selected with anxiety disorders, except the study of Kiliç et al. (2003) on fathers' post-traumatic stress disorder (PTSD). The finding that after an earthquake, fathers' but not mothers' PTSD predicted whether their offspring developed the same anxiety disorder, is striking. It suggests that in the face of threat, children do look for clues from their father in how to interpret the event. Moreover, there is some evidence that anxiety in fathers shapes the relationship with their child, such that the child perceives the relationship as less warm and more conflictual.

2.2.3. *Cross-sectional correlational studies*

A series of correlational, cross-sectional studies have been conducted studying father variables in relation to child anxiety. First, we review observational studies, and second, self-report studies.

Mattanah (2001) studied fathers' and mothers' behavior during a series of parent–child interaction tasks. Fathers', but not mothers' observed warmth, and fathers' but not mothers' encouragement of psychological autonomy as reported by their child, over and above the effects of observed paternal warmth, correlated with lower levels of teacher-rated internalizing symptoms in children. This effect was specific for internalizing symptoms, that is, fathers' warmth and autonomy encouragement did not correlate with child externalizing symptoms. Van der Bruggen, Bögels, and van Zeilst (submitted for publication) studied fathers' versus mothers' behaviors during a complex puzzle task, and found that fathers' more controlling verbal and non-verbal behaviors were related to higher levels of their own and their child's trait anxiety, but only when the child was a boy. Mothers' controlling behavior was unrelated to boys' anxiety, and both parents' more controlling behaviors were negatively related to girls' anxiety, that is, the more trait anxious the girl, the less both parents were controlling. Chorpita, Albano, and Barlow (1996) observed mothers' and fathers' interaction with the child while discussing the child's interpretation of a series of ambiguous situations, and related this to children's final interpretations of these situations. Parents' more anxious utterances during the discussion were related with change of the children's interpretations and action plans toward more perceived threat and avoidance. They found somewhat higher correlations for fathers' than for mothers' more anxious responses during the discussion with children's changes in interpretations and plans towards more threat and avoidance. Note however that the sample of this study was small ($n=12$).

We will now review correlational studies conducted with the use of interviews or self-report on the role of paternal variables in child anxiety. Fathers who reported attitudes of male superiority were more likely to have daughters with anxious depression (Silverstein & Lynch, 1998). In a large self-report community study by Jorm, Dear, Rodgers, and Christensen (2003), paternal and maternal affection as reported by their adult offspring ($n=4934$) independently correlated with adult offspring's lower anxiety symptoms, but fathers' affection correlated more strongly ($p<.0001$ versus $p=.0066$). In addition, if mothers' affection was low, high father affection was associated with high anxiety,

suggesting that fathers cannot compensate for low maternal affection by high paternal affection. Bosco, Renk, Dinger, Epstein, and Phares (2003) found that paternal, but not maternal, higher level of anxiety and depression were related to adolescent daughters' higher level of anxiety and depression. Moreover, daughters' perceptions of paternal, but not maternal, higher acceptance and lower control, independently contributed to adolescent anxiety and depression. In contrast, daughters' perceptions of *lower* maternal control predicted higher anxiety and depression in adolescents. For sons, their perceptions of parental conflict and triangulation were related to their anxiety and depression. A recent study by Brakel, van Muris, Bögels, and Thomassen (2006) involving a large sample of 11–15 year old children found that child-perceived anxious rearing behaviors of fathers, rather than mothers, were predictive of child anxiety symptoms. Bögels and van Melick (2004) found that paternal autonomy encouragement was predominantly related to lower child anxiety, whereas maternal autonomy encouragement was predominantly associated with lower maternal anxiety. A study by Kohlmann, Schumacher, and Streit (1988) found higher inconsistency of mother and father, as perceived by children aged 12–14, to be associated with higher trait anxiety, but in girls, maternal inconsistency was buffered by child-perceived greater paternal support. Specifically, the association between girls' trait anxiety and maternal inconsistency was low when fathers' support was high. In a sample of older adolescent girls, more negative perceptions of fathers were related to higher rates of anxiety and poorer self-esteem (Renk, McKinney, Klein, & Oliveros, 2006). A study on the intergenerational transmission of fear of failure (Elliot & Trash, 2004) showed that, although both fathers and mothers fear of failure predicted undergraduate's adoption of performance-avoidance goals in class (that is, avoiding activities that might reveal incompetence relative to others), only fathers' fear of failure predicted undergraduate's mastery adoption goals, that is, development of competence. This study suggests that fathers have a unique role in promoting children's competence.

In contrast to these correlational studies that all reveal evidence for a specific role of father involvement in child internalizing problems, the following two studies found father variables to be correlated with externalizing but not anxiety problems in children. First, in a combined clinical and control group of children and adolescents, Bögels et al. (2001) found that self- or father-reported rearing variables and fathers' social anxiety did not predict child social anxiety, whereas some mother rearing variables and mothers' social anxiety did. In contrast, fathers' but not mothers' negative (overprotective and rejecting) rearing practices, as perceived by child and parent, were strongly related to higher child externalizing symptoms in the same clinical group (Muris, Bögels, Meesters, Van der Kamp, & van Oosten, 1996). Lack of father involvement (a composite of mother- and child-report) was correlated with externalizing, but not with shy and anxious behavior in a study of sixth-grade African-American children (McCabe, Clark, & Barnett, 1999).

In sum, most but not all of the reviewed correlational studies provide evidence for a specific role of the father in child anxiety. Child anxiety was related to paternal control, lack of affection, anxious rearing, and paternal anxiety.

2.2.4. Longitudinal studies on father variables that predict child anxiety

Belsky, Hsieh, and Crnic (1998) conducted a longitudinal study on observed mothers and fathers rearing behavior of high and low negative emotionality on 3 year old boys' inhibition. As inhibition is a predisposition for child anxiety, the study is relevant in the present context. They found that fathers, but not mothers', rearing behavior predicted their young sons' level of inhibition. However, the relationship was opposite to the theory of parental control inducing child anxiety. That is, *less* negative (i.e. intrusive) and *more* positive (i.e. sensitive) fathering forecasted *more* inhibition. Apparently, highly negative male toddlers become less inhibited when they experience limited positive and more negative fathering. Less positive and more negative fathering may represent a less sensitive and more limiting paternal rearing style. A tentative explanation for this finding is that fathers may need to play a different role in raising their temperamentally anxious child than do mothers. Their role might be, at least in boys, to push and challenge them, while putting limits on their avoidant behavior and maybe sometimes ignoring their anxiety, in order to "toughen them up" to what society may require from them.

Various studies have been conducted on the specific role of father involvement and father closeness on adolescents' anxiety symptoms. In divorced families, a closer father–adolescent relationship as perceived by the father predicted less adolescent anxiety *beyond* maternal variables (McCombs et al., 1993). In the same line, father–adolescent closeness as perceived by the adolescent, and as perceived by the fathers, predicted less adolescent anxiety/withdrawn problems, *beyond* maternal closeness, in divorced families (Thomas & Forehand, 1993). The importance of father closeness as protection against anxiety in young adulthood was demonstrated in a longitudinal study of Summers, Forehand, Armistead, and Tannenbaum (1998). Adolescents' perceived lack of closeness of the father–child

relationship, more than the mother–child relationship, predicted anxiety and depressive symptoms in young adults. These patterns can also be seen when exploring the co-parenting behaviors of mothers and fathers.

Co-parenting relates to the behaviors that parents display to the child that support or do not support the other parent, whether the other parent is present or not. [McHale and Rasmussen \(1998\)](#) found that observed lack of co-parenting between father and mother at age 1 of the child, predicts greater teacher-rated anxiety when the child is 4 years. Observed co-parenting at age 1 predicted parents' self-reported co-parenting at age 4. Moreover, fathers' self-report of lack of supportive co-parenting and mothers' self-report of her more non-supportive, disparaging co-parenting, at age 4 strongly related to higher teacher-reported child anxiety at age 4. That is, mothers' reported disparaging co-parenting explained 25% of the variance in teacher-reported child anxiety, and fathers' report of supportive co-parenting explained 20% of teacher-rated child anxiety.

2.3. Conclusion

There is evidence from top-down, bottom-up, correlational as well as longitudinal studies that fathers play an important role in childhood anxiety, which may in some ways be different from that of mothers. If fathers are not limiting, involved, and do not encourage the autonomy of the child, the child is at risk for anxiety symptoms. Children with anxiety disorders have a three-fold likelihood that their father had an anxiety disorder too, and there is some preliminary evidence that paternal anxiety shapes the relationship with the child in terms of less warmth and more conflict. Moreover, children seem to put higher weight on fathers' responses than on mothers' responses in the face of possible threat, in order to decide whether the situation is dangerous and should be avoided, which is related to the development of subsequent anxiety or an anxiety disorder. The connections between fathers' behaviors and children's anxiety suggest that it may be worthwhile to explore the role of fathers in the treatment of childhood anxiety, which we do in the next section.

3. Fathers' involvement in the treatment of childhood anxiety

Parents are not always included in the treatment of developmental psychopathology. This section will first discuss the lack of parental involvement in treatment of developmental psychopathology in general and then will address the specific lack of involvement of parents in the treatment of childhood anxiety disorders. Next, fathers' involvement in the treatment of the wide variety of types of developmental psychopathology will be addressed, followed by an exploration of fathers' involvement in treatment for childhood anxiety disorders. Thus, the lack of parental involvement in the treatment of anxiety will be explored and then the specific lack of fathers in the treatment of childhood anxiety disorders will be addressed.

3.1. Parents' involvement in the treatment of childhood anxiety

Before addressing fathers' involvement in the treatment of developmental psychopathology in general and childhood anxiety more specifically, it is necessary to consider whether parents (i.e., either mothers or fathers) are involved in these intervention efforts. The involvement of parents in treatment depends somewhat on the theoretical orientation of the clinician and on the location of the treatment site where the child is being treated. In addition, the specific type of referral problem has an impact on whether parents are involved in treatment of their children's emotional/behavioral problems. Regarding the theoretical orientation, certain theoretical orientations, such as family systems therapy and behavioral parent training, are more conducive to parental involvement in treatment than others such as psychodynamic, interpersonal process, and client-centered therapy ([Phares, Fields, & Binitie, 2006](#)).

One survey of clinicians in outpatient settings found that parents were not included in 41% of the sessions for treatment of children's emotional/behavioral problems ([Duhig, Phares, & Birkeland, 2002](#)). This lack of parental involvement is even more noticeable in the school setting ([Logan & King, 2001](#)). Because of the constraints and time-demands of working in the school system and because of the difficulty in getting parents to show up at therapy appointments during the work-day at their child's school, it is not surprising that little therapy in the school setting is conducted with the involvement of parents ([Greif & Greif, 2004](#)).

The type of referral problem that the child is experiencing also is related to parental involvement in treatment. The majority of treatments for externalizing disorders, such as conduct disorder ([Chamberlain & Smith, 2003](#); [Webster-](#)

Stratton & Reid, 2003) and oppositional defiant disorder (Bretnan & Eyberg, 1998) require parental involvement whereas many treatments for internalizing problems such as depression (Weisz, Southam-Gerow, Gordis, & Connor-Smith, 2003) work with children directly and only involve parents in a peripheral manner, if at all.

Anxiety disorders are similar to other internalizing disorders such as depression in that the large majority of treatments focus on the child individually rather than engaging parents as an integral part of the treatment. The large majority of evidenced-based treatments for childhood anxiety, such as Coping Cat (Kendall, 1990), focus the treatment regimen on the individual child. Parents are considered an integral part of treatment in a supportive role, but are not considered to be part of the formal treatment (Kendall, Aschenbrand, & Hudson, 2003). Randomized clinical trials suggest that the Coping Cat treatment program and other similar cognitive behavioral programs are effective in reducing symptoms of anxiety in children at post-treatment and at long-term follow-up (Kendall et al., 2003; Kendall, Hudson, Choudhury, Webb, & Pimentel, 2005).

Other treatments, however, do have a more formal role for parents in the treatment of childhood anxiety. For example, the FRIENDS treatment program is considered a family-based treatment that includes both children and parents in the formal treatment regimen (Shortt, Barrett, & Fox, 2001). The child-focused portion of the treatment is based on the Coping Cat treatment program, but parents are also included in the treatment to help provide opportunities for children to test cognitive distortions and as role models of adaptive coping (Barrett & Shortt, 2003). The FRIENDS treatment program has been found to be effective at reducing anxiety symptoms at the termination of treatment as well as at one-year follow-up (Shortt et al., 2001). Other cognitive behavioral treatments that focus on parental involvement in treatment have also shown promise in decreasing symptoms of anxiety in younger children (Cartwright-Hatton, McNally, & White, 2005).

The question remains, however, as to whether the inclusion of parents in treatment for childhood anxiety is superior to child-focused treatments. In a study that compared families who were randomly assigned to either child-only, parent-only, or parent and child treatment groups, Mendlowitz, Manassis, Bradley, Scapillato, Miezitis, and Shaw (1999) found that children in the parent and child combined treatment group showed superior treatment gains. Specifically, children in the combined treatment group showed significantly more active coping at termination and parents reported greater overall well-being of the children in the combined treatment group compared with the children in the other two groups. One study of treatment for childhood social phobia found that there were trends toward greater improvements in children's symptoms when parents were engaged in treatment, but these trends were not statistically significant (Spence, Donovan, & Brechman-Toussaint, 2000). Another outcome study that compared child-focused treatment with comparable treatment paired with a cognitive parent training program found no additional symptom reductions based on the additional parental sessions (Nauta, Scholing, Emmelkamp, & Minderaa, 2003). One long-term follow-up study that compared child-focused treatment with treatment that included a parent component found that, although at post-treatment and 1 year follow-up the treatment including a parent component was more effective (Barrett, Dadds, & Rapee, 1996), at 6-year follow-up neither treatment was superior to the other in reducing the number of children who met criteria for an anxiety disorder (Barrett, Duffy, Dadds, & Rapee, 2001). Based on a critical review of this literature, Barmish and Kendall (2005) concluded that although there are some studies that find superior outcomes when parents are involved in treatment, there is no conclusive evidence for or against the inclusion of parents in the treatment of anxiety disorders in youth.

Although there is only some limited evidence that the addition of parent involvement in the treatment of childhood anxiety disorders reduces symptoms of childhood anxiety when compared with child-focused treatment, there is evidence of other gains when parents are involved in the treatment of childhood anxiety. For example, parental involvement in treatment for childhood anxiety disorders appears to help increase adaptive coping strategies in which the children engage and appears to address other more global aspects of the children's functioning at post-treatment (Mendlowitz et al., 1999). In a thorough summary of outcome studies, Silverman and Berman (2001) concluded that individually-based treatments for childhood anxiety were effective but that parental involvement in treatment could enhance treatment effects for both children's anxiety and could help to manage parents' anxiety when needed. Overall, there have been a number of reviews that have suggested that the inclusion of parents in the treatment of childhood anxiety is associated with some greater improvements in the children as well as the parents (Ginsburg & Schlossberg, 2002; Ginsburg, Silverman, & Kurtines, 1995). Further research into the benefits and developmental sensitivity required for parental involvement of anxious youths has been identified as an area in need of further study (Kendall & Ollendick, 2004). Nearly all of the studies reviewed here utilized mothers in the parent-treatment groups or only described their participants as "parents" without specifying the numbers of mothers versus fathers who were engaged in the treatment. This pattern is evident in studies of other types of psychopathology as well.

3.2. Fathers' involvement in the treatment of childhood anxiety

Not surprisingly, fathers are included to a lesser extent than are mothers in the treatment of developmental psychopathology in general and childhood anxiety more specifically. One survey of clinicians found that fathers were included in 6% of the treatment for developmental psychopathology whereas mothers were included in 38% of the treatment (Lazar, Sagi, & Fraser, 1991). More recently, another survey of clinicians found that fathers were included in 30% of therapy sessions and mothers were included in 59% of therapy sessions (Duhig et al., 2002). These findings were consistent regardless of family constellation and the age of the child.

When fathers are included in treatment of various types of developmental psychopathology, there is evidence that better long-term effects are evident. At long-term follow-up, children involved in behavioral parent training that included fathers and mothers rather than just mothers showed significant maintenance of treatment gains (Bagner & Eyberg, 2003; Coplin & Houts, 1991; Webster-Stratton, 1995). Thus, for behavioral parent training for externalizing disorders, there is empirical support to encourage the inclusion of fathers in treatment.

In contrast to externalizing disorders, there is far less known about the inclusion of fathers in the treatment of childhood anxiety disorders. There is evidence that mothers' and fathers' own functioning relate to children's gains in treatment. In a study that explored familial predictors of treatment outcome for childhood anxiety, Crawford and Manassis (2001) found that different patterns of predictors were found depending on whose reports of child functioning were used. Specifically, children's reports of treatment gains were predicted from children's reports of family dysfunction, children's perceptions of maternal frustration, and fathers' own reports of somatization. Mothers' reports of treatment gains were predicted from both mothers' and fathers' reports of family dysfunction and from mothers' reports of their own parenting stress. Fathers' reports of treatment gains were not associated with any familial predictors. There were, however, a number of familial variables that were associated with treatment gains when comparing pre-treatment to post-treatment functioning. Notably, child-oriented treatment for anxiety disorders resulted in a decrease of child-reported family dysfunction, maternal psychological symptoms, and maternal and paternal frustration. Overall, this study suggested that even when children are the sole target of treatment, both mothers' and fathers' functioning can be improved and can be associated with children's improvements in treatment.

Parents' functioning can also influence the course of treatment. For example, fathers' self-reported somatization, but not mothers' self-reported psychiatric symptoms, negatively predicted outcome on child self-rated anxiety ($n=61$) after treatment (Crawford & Manassis, 2001). According to the authors, fathers who somatize might model and encourage avoidant behavior in their children. Even more relevant, Rapee (2000) investigated paternal and maternal pre-treatment anxiety as predictors of change in a family treatment for groups of about five families with an anxiety disordered child ($n=95$). Fathers' higher anxiety, but not mothers' anxiety, predicted worse outcome for children at post-treatment and at one-year follow-up. Unfortunately, it was not investigated whether decrease in paternal anxiety during treatment predicted better child outcome. That is, it might well be that those fathers with high anxiety who improved during treatment have a positive effect on their child's improvement. Support for this hypothesis comes from a study in which fathers, but not mothers, improved with respect to their own anxiety after a family treatment directed to their anxiety-disordered child (Bögels & Siqueland, 2006). Note however that the sample in this study was small ($n=17$) and therefore needs replication.

When exploring parental involvement in treatment of anxiety disorders in children, it is also relevant to consider whether studies have been completed on maternal and paternal involvement in programs aimed at preventing the development of anxiety in children. Although there have been some promising preventive interventions related to child anxiety (reviewed in Barrett & Turner, 2004; Hudson, Flannery-Schroeder, & Kendall, 2004), no known studies have explored fathers' participation in preventive efforts.

Overall, there is a great need for future research into the effectiveness of including fathers into treatment and prevention programs for childhood anxiety. The limited work in this area suggests that it will be a fruitful area of exploration in order to further enhance the functioning of anxious children and their families.

4. Discussion and model

The empirical evidence for the role of the father in the etiology, prevention and treatment of childhood anxiety was reviewed. The following conclusions can be drawn: (I) Fathers have been neglected in research on the etiology, prevention and treatment of childhood anxiety; (II) research on normal development suggests that fathers play an important and different role than mothers in the socialization of children and in the protection against severe anxiety;

(III) research in the area of developmental psychopathology suggests that if fathers are not involved, are not warm, and do not encourage the autonomy of the child, and if they display anxiety themselves, the child can be at risk for anxiety symptoms; (IV) very little is known on the specific role of the father in child anxiety treatment, but based on the evidence about their specific role in the development of child anxiety, their role could be important.

Every effort should be made to involve fathers in the research of the etiology of child anxiety, and to make sure that *all* fathers are involved, that is, including divorced fathers, anxious fathers, and fathers who are so involved in the outside world that it is hard for them to make the time for research. Only then the full range of variance in paternal rearing behavior will be assessed, which is a precondition for measuring paternal influence on child anxiety. But even if fathers are included in research into childhood anxiety, without specific models concerning a *different* role of the father compared to the mother in the etiology of child anxiety, we may not be able to assess their influence. There is ample evidence, as was reviewed here, that fathers play different roles than mothers in child development. As Paquette (2004) concluded, mothers are for care, fathers for play. The type of play that fathers engage their child in (physical, challenging) might well be crucial not only in the development of children's socialization and coping with their own aggression, but also for learning to cope with anxiety. Unfortunately, researchers typically observe mothers and fathers in the same contexts (Lamb & Lewis, 2004). Future research into parenting behaviors thought to be related to the development of child anxiety should not only include fathers, but also investigate the different roles that they may have in encouraging child anxiety, and in protecting a child against a development towards fearfulness.

Fathers and mothers form a dynamic system in the way they influence their children. Just as it was argued that maternal overprotection of children may well be the result of paternal anxiety and absenteeism, paternal challenging and physical play may result from maternal variables such as care. In fact, some of the few studies investigating the effects of fathers on child development while controlling for the mother–child relationship, did not find a father effect after taking into account mother–child effects (see Marsiglio et al., 2000). Statistical models such as multilevel analysis, that can test shared versus unique method variance of particular rearing behaviors of fathers and mothers (e.g. physical play versus care) need to be applied in order to investigate father–child and mother–child interaction as a dynamic system.

In addition to the relationship of the other parent with the child, the influence of the marital relationship and the support provided by the other parent should be taken into account when investigating the contribution of the one parent. It is important to note that men and women respond differently to marital disharmony: women tend to engage whereas men tend to withdraw from interactions with their child (Gottman, 1994). As a result, the effect of paternal lack of involvement on child anxiety, as has been reported, may be caused by marital disharmony. Therefore, it cannot be ruled out that the reported effects of paternal lack of involvement on child anxiety are only a byproduct of the association between marital discord and child anxiety. Clearly, including measures of marital quality in research on the paternal role in child anxiety can shed more light on this issue.

In this review, no clear pattern of the role of the child's gender was found when examining the paternal versus maternal role in anxiety of their offspring. Some studies revealed specific paternal effects only for sons, while others found paternal effects only for daughters. These contradictory findings might be explained by the age and developmental phase differences of the children that have been studied. For infants and preschool children, same sex models might be particularly influential, explaining the father effects that have been found only in male infants in some of the studies reviewed. Adolescents have the developmental task to separate from their mothers and families. Such separation might be more difficult for adolescent girls than boys, as their same-sex model, the mother, is at home (in traditional families) or at least is more involved in daily caretaking (in most families). At this stage, the presence and involvement of a father might be crucial for the adolescent girl to separate from home and develop further autonomy. This process may explain the father effects that have been found only in female offspring in some of the reviewed studies (e.g. Bosco et al., 2003; Flouri & Buchanan, 2003a,b). Thus, age by gender interactions need to be studied more systematically in further research into differential effects of fathers and mothers on the development of the anxiety in their daughters versus their sons.

In Fig. 1, a preliminary model is presented concerning the specific roles of the father versus mother throughout development of children's normal coping with anxiety. The general hypothesis is that the roles of the father at various stages of the child's development that we assume to be relevant in the context of preventing child anxiety (e.g. physical play), are more affected by their own fears and anxieties than the roles of the mother (e.g. care). That is, an anxious father may not be able to challenge his infant, encourage risk taking, and engage in energetic physical play. An anxious mother, on the other hand, might be as effective in caring for and protecting the infant. An alternative view would be

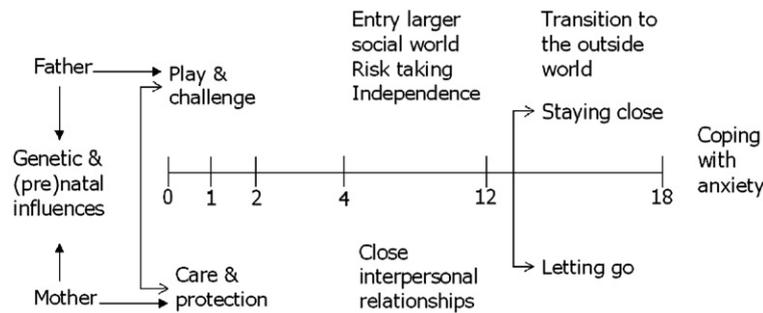


Fig. 1. Different roles of fathers and mothers in their offspring's infancy, childhood, and adolescence, that, in interaction with child's temperament, determine child's anxiety outcome. Notes: The ages on the horizontal line indicate a developmental perspective from babyhood, infancy, childhood, up to adolescence with different roles for both parents at different stages, and should not be taken literally.

that both father and mother roles are affected by their own anxiety, but as they play different roles in their child's development, and different roles in different stages, paternal and maternal anxiety will affect children differently, and different in different stages. To give an example: paternal anxiety in adolescence may hinder the father in his role of helping the child with the transition to the outside world, whereas maternal anxiety will hinder the mother in her role of letting go (see Fig. 1). Clearly, research is needed to test both views (i.e., anxiety in fathers plays a more important versus different role than mothers).

With respect to genetic and pre, peri and early postnatal factors that may set the stage for an anxious development, an important theory concerns the differential susceptibility for rearing influences (Belsky, 1997). That is, those children who have a temperament that may predispose them for anxiety (e.g. behavior inhibition, negative emotionality) will be more susceptible for parenting behavior. Such predisposed children will take more clues from their parents about how to interpret new situations (as threat or opportunity) and how to cope with anxieties. As the vast majority of children with a behaviorally inhibited temperament lose their inhibition in the first years of life (Kagan & Snidman, 1999), it could be speculated that parents (and thus also fathers) have an important influence precisely in those early years in protecting their inhibited child from a development towards extreme anxiety.

The clinical implications of the proposed model of the unique contributions of fathers to the etiology of excessive child anxiety, and to the protection against such anxiety, are numerous. The common clinical practice, of helping mothers to become less overprotective towards and more encouraging independence of their anxious child, might not be optimal practice. Rather, it can be speculated that clinicians need to stimulate fathers to be more playful with their anxious child, particularly in relation to physical and challenging play. Also, encouraging paternal involvement with their offspring, especially in the case of divorce or chronic marital problems, might be important to prevent their children from an anxious development. One could also speculate on the basis of the proposed model, that paternal involvement in Cognitive Behavioral Therapy (CBT) for anxiety-disordered children might be more effective than maternal involvement. That is, because of their different role, fathers might be more effective change agents if it comes to guiding their child through exposures, in order to provide security through sensitive and challenging support as a companion when the child's exploratory system is aroused (Grossmann et al., 2002).

It could be argued that the model of differential roles for fathers and mothers in the context of child anxiety is restricted to traditional families, and that it does not have predictive power in families in which mothers are employed and fathers carry more care tasks. There are, however, two reasons why the model may also apply to a diversity of families. First, several studies have shown that fathers who are highly involved in child care are still engaged in more playful and less containing interactions than do mothers regardless of their involvement in child care (see Lamb & Lewis, 2004). Second, because men tend to be stronger, taller and more aggressive than women (Paquette, 2004), children may overweigh the model from their father when it comes to deciding whether a new or ambiguous situation is safe or dangerous (Bögels & Perotti, submitted for publication). Such a dominance of the father signal from the perspective of the child explains the results from Kiliç et al.'s (2003) study that found that paternal but not maternal post-traumatic stress disorder after an earthquake predicted children's post-traumatic stress.

A limitation of many of these studies is that no causal relationships can be drawn. For example, fathers who are more playful or who are more involved with their children might have passed on different genes to their children that explain this relationship. Even longitudinal studies do not solve this problem. Therefore, experimental and genetically sensitive

designs are needed to further investigate the causal role of fathers in the development of child anxiety. Examples of experimental designs are the studies of Gerull and Rapee (2002) and De Rosnay, Cooper, Tsigaras, & Murray (2006) in which mothers who were instructed to behave anxiously indeed increased the anxious behavior of their child towards a rubber spider or snake and towards the stranger. Similar studies are needed in which paternal and maternal behavior are manipulated experimentally and the effects on children's anxiety are assessed.

Although there are overlaps between the effects of mothers and fathers on their children's anxiety, this review highlighted the evidence that fathers make separate contributions to child anxiety. Studying such separate contributions may contribute to further insight in the etiology of childhood anxiety and its prevention and treatment.

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