Childhood anxiety disorders - a family perspective
Lindhout, I. E.

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Ingeborg E. Lindhout, Monica Th. Markus, Sophie R. Borst, Thea H.G. Hoogendijk, Peter M.A.J. Dingemans, Frits Boer

Submitted
Abstract

This study examined whether parents of 1) anxiety-disordered (AD) children differed from those of non-clinical controls in their child-rearing style, and whether 2) parents reared their AD children differently as compared from their siblings.

A clinical sample of 25 AD children, age range 8-13 years, was compared with 25 siblings and a non-clinical control group (n=25). Child-rearing was assessed by parental self-report, and child report, and through an expressed emotion interview measure.

AD children perceived more parental rejection than non-clinical control children or the AD children’s siblings. High-expressed emotion was scored significantly more often towards AD children than non-clinical control children, or their siblings. On ‘care’ and ‘control’ parental self-report demonstrated some differences regarding AD children on the one hand and non-clinical control children or siblings of AD children on the other.

These results suggest that the rearing of AD children differs significantly both from the rearing of their siblings and that of non-clinical control children.
Introduction

Anxiety disorders are the most prevalent forms of psychopathology, both in adults and in children. Although anxiety disorders in childhood or adolescence may be time limited, they often return and show remission and persist into adulthood (Keller et al., 1992). Anxiety disorders tend to aggregate in families (Beidel & Turner, 1997; Last, Hersen, Kazdin, Orvaschel, & Perrin, 1991; Last, Hersen, Kadzin, Francis, Grubb, 1987; Merikangas, Dierker, & Szatmari, 1998; Turner, Beidel, & Costello, 1987). Behavior-genetic studies of adult anxiety disorders indicate that genetic factors play a clear, but moderate role (Hettema, Neale, & Kendler, 2001). Genetic studies of childhood anxiety disorders are now emerging, and have produced conflicting findings depending upon the informant and the design chosen (Hewitt et al., 1997). Eley (1999) estimated the genetic contribution to anxiety-disordered (AD) children to be modest to moderate. It is concluded that environmental familial factors have to be considered as well, of which child-rearing is one of the most extensively studied (Bögels & Brechman-Toussaint, 2006).

Child-rearing style has been studied systematically since the 1950’s (Maccoby & Martin, 1983). Several factor analytic studies of parental characteristics originally showed 3 child-rearing dimensions: ‘Acceptance versus Rejection’, ‘Psychological Autonomy versus Psychological Control’, and ‘Firm Control versus Lax Control’ (Schaefer, 1965).

In later work the original control factors collapsed into one, thereby restricting the dimensions of parenting to two factors: care (also called ‘warmth’, ‘acceptance’ or ‘nurturance’, with ‘rejection’ on the opposite pole of the dimension) and control (or ‘protection’) (Rapee, 1997; Wood, McLeod, Sigman, Hwang, & Chu, 2003). These factors were replicated in a wide variety of populations, including subjects from different cultures (e.g., Arrindell, Hanewald, & Kolk, 1989; Arrindell et al., 1994), adolescents and children (Castro, Toro, Van der Ende, & Arrindell, 1993; Gerlsma, Emmelkamp, & Arrindell, 1990; Markus, Lindhout, Boer, Hoogendijk, & Arrindell, 2003).

Work in the expressed emotion (EE) paradigm has yielded similar dimensions. EE is a summary measure of family affect, which was introduced in a study of relapse among schizophrenic patients (Brown, Birley, & Wing, 1972). When EE is measured in parents regarding their child, it reflects child-rearing attitudes (Wearden, Tarrier, Barrowclough, Zastowny, & Armstrong Rahill, 2000). The two dimensions of EE, ‘critical comments’ and ‘emotional overinvolvement’ are akin to ‘acceptance versus rejection’ and ‘control’ respectively.
Research into parenting and anxiety disorders started with questionnaires (particularly the Parental Bonding Instrument, PBI; Parker, Tupling, & Brown, 1979; and the Egna Minnen Beträffande Uppfostran, EMBU; Perris, Jacobsson, Lindstrom, von Knorring, & Perris, 1980) investigating how adult patients look back at their upbringing. Both the PBI and EMBU measure child-rearing dimensions ‘care’ and ‘control’. In addition to ‘Overprotection’ (the control-dimension), the EMBU measures two separate affection dimensions: ‘Emotional Warmth’ and ‘Rejection’, which both load on a bipolar ‘care’ dimension in a higher-order factor analysis (Arrindell, Emmelkamp, Brilman, & Monsma, 1983; Castro et al, 1993; Markus et al., 2003; Muris, Meesters, & van Brakel, 2003). The main finding of the retrospective studies was that AD patients perceive their parents as having been more rejecting and more controlling than non-clinical subjects (see: Gerlsma et al., 1990 for a meta-analysis). The retrospective studies are limited by their retrospective design, including the concern that the recollections of childhood experiences are concomitant with the psychological disorder the patient is inflicted with at the time of the assessment. In addition it was found that the patients tended to blame the parents for their disorder (Gerlsma, 1994).

Studies on child-rearing in AD children and adolescents have been performed in the community (e.g., Grüner, Muris, & Merckelbach, 1999; Hale, Engels, & Meeus, 2006; Lieb et al., 2000; Messer & Beidel, 1994; Muris, Loxton, De Plessis, King, & Ollendick, 2006; Stubbe, Zahner, Goldstein, & Leckman, 1993), high-risk (Hirshfeld, Biederman, Brody, Faraone, & Rosenbaum, 1997; McClure, Brennan, Hammen, & Le Brocque, 2001) and in clinical samples (e.g., Barrett, Rapee, Dadds, & Ryan, 1996; Brown, & Whiteside, 2008; Dadds, Barrett, Rapee, & Ryan, 1996; Hudson & Rapee, 2001; Hudson & Rapee, 2002; Moore, Whaley, & Sigman, 2004; Muris, Bögels, Van der Kamp, & Van Oosten, 1996; Siqueland, Kendall, & Steinberg, 1996; Vostanis, Nicholls, & Harrington, 1994; Wood, 2006). The community studies were restricted mostly to children under 12 years, whereas clinical studies usually included both children and adolescents, covering an age range of 6 to 18 years. In the majority of these studies the measurement of child-rearing was based on one informant. Results from studies using a single (questionnaire based) informant could be biased by shared method variance or (especially maternal) underreporting of maladaptive parenting behavior (Bögels & Brechman-Toussaint, 2006). A minority of studies reported on both mothers and fathers (Grüner et al., 1999; Hudson & Rapee, 2002; Lieb et al., 2000; Messer & Beidel, 1994; Muris et al., 1996; Siqueland et al., 1996; Wood, 2006).
Findings from the community studies were mixed. Some showed parental rejection and overprotection as reported by the child to be positively correlated with childhood anxiety disorders (Grüner et al., 1999; Muris et al., 2006; Lieb et al., 2000), although one study only found a trend for promoting less independence (Messer & Beidel, 1994) or Emotional Overinvolvement (Stubbe et al., 1996), and one study found a unique contribution of parental rejection only (Hale et al., 2006). Regarding parental warmth, the community studies did not find a significant relationship with anxiety disorders (Grüner et al., 1999; Lieb et al., 2000).

Observational studies of a clinical population showed an association between parental overprotection or overinvolvement and anxiety disorders in children (Barrett et al., 1996; Dadds et al., 1996; Hudson & Rapee, 2001; Hudson & Rapee, 2002; Moore et al., 2004; Siqueland et al., 1996). A study of perceived child-rearing in a clinical population failed to show an association with fearfulness or anxiety disorders (Muris et al., 1996). Four studies found that AD children perceive more rejection or less warmth (Brown, & Whiteside, 2007; Moore et al., 2004; Siqueland et al., 1996; Vostanis et al., 1994). Studies with multiple informants showed important differences in outcome, depending on the perspective of the informant. In one study, parent report did not show a correlation between child-rearing and childhood anxiety disorders, whereas outside observers reported less granting of psychological autonomy towards AD children, and children reported being less accepted by both parents (Siqueland et al., 1996). A study using a composite score of multiple informants found associations between parental intrusiveness and separation anxiety specifically, and not with other anxiety disorders (Wood, 2006). Studies that included both parents showed similar child-rearing styles for mothers and fathers (Grüner et al., 1999; Muris et al., 1996; Siqueland et al., 1996).

In summary, several studies of concurrent parenting in families with an AD child confirm the findings of the early retrospective studies. However, as most of this research is cross-sectional a significant unanswered question is whether parental rearing style plays a causal role in the development of child anxiety or vice versa (Bögels & Brechman-Toussaint, 2006). One method to investigate the direction of this relationship is by including a sibling of the AD child and to determine whether the parental rearing style is specific for the AD child. The only study with this design performed until now found that observed maternal overinvolvement was not exclusive for AD children, but regarded siblings as well (Hudson & Rapee, 2002).
The present study is designed to extend previous research by assessing parenting through multiple methods and by including siblings of clinically-referred AD children. We hypothesized that parents of children with anxiety disorders are more controlling and less nurturant/warm towards their anxious child than parents of non-clinical controls. Furthermore, we hypothesized that parents in families with a clinically referred AD child are more controlling and less nurturant toward their anxious child than toward the sibling of this child.

Method

Sample

Patient sample

All families of children (aged 8-13 years old), referred consecutively to an outpatient clinic for child and adolescent psychiatry, with anxiety disorder as the primary diagnosis, were asked to participate in the present study. Additional criteria for inclusion were: living with two parents and having at least one sibling, aged 6-13 years old.

Families were excluded if the child met criteria for the following DSM-III-R diagnoses: mental retardation, pervasive developmental disorder, or schizophrenia. Of the 35 eligible families 25 participated after signing informed consent. Ten families refused to participate for various reasons (mostly time constraints, sometimes the concern that the research would burden the child). Families who agreed to participate and families who declined did not differ significantly in average age of child, gender distribution of children and average income. The clinical families included 11 girls and 14 boys ($M = 10.8$ years old) with anxiety disorders, 25 siblings nearest in age, and both parents.

The siblings of the AD children consisted of 14 girls and 11 boys ($M = 9.07$); 18 of the siblings (72%) were younger than the AD children, versus 7 (28%) older. The AD children had a diagnosis, as determined with the Anxiety Disorders Interview Schedule (ADIS-C/P; Silverman & Nelles, 1988; Siebelink & Treffers, 1995a, b), of Overanxious Disorder ($N= 15$), Generalized Anxiety Disorder ($N = 2$), Separation Anxiety Disorder ($N = 16$), Social Phobia ($N = 10$) or Panic Disorder without Agoraphobia ($N = 2$), according to DSM-III-R criteria (APA, 1987). Additional comorbid anxiety disorders were Simple Phobia ($N = 8$) and Posttraumatic Stress Disorder ($N = 1$). Comorbidity among the anxiety disorders was common, with 56% of the children having more than one anxiety disorder diagnosis. Five AD children also presented with a
diagnosis of Dysthymia, two AD children had a Major Depression, and one AD child had a comorbid mood disorder of Dysthymia and Major Depression.

According to the Anxiety Disorders Interview Schedule, six siblings of the AD children had an anxiety disorder as well (24%; 4 girls and 2 boys). They all presented with a diagnosis of overanxious disorder, and one had comorbid diagnoses of separation anxiety disorder and avoidant disorder. None of these six siblings presented with other mental disorders or had been referred for psychiatric or psychological help.

Control sample
The control group was recruited from circles of friends and acquaintances of the clinical families to ensure optimal similarity for cultural and social-economic status. In seven of the original 32 families that were approached, one or both children appeared not to be free from psychopathology. These families were therefore excluded. The remaining control group consisted of 25 two-parent families of which two siblings, within the age range of 7 to 13 years old, participated. The children were: 10 girls and 15 boys ($M = 10.9$ years old). The children in this group had never used mental health services.

The patient and control sample did not significantly differ on income, educational level, ethnicity (Caucasian), gender and age of the children, and birth order.

Assessments
The ADIS-C/P (Silverman & Nelles, 1988) are semistructured interviews with the child and one of its parents respectively. We used the Dutch version of both interviews (Siebelink & Treffers, 1995a, b). The ADIS-C assesses all DSM-III-R anxiety and mood disorders. Furthermore the ADIS-P assesses some additional mental disorders to be ruled out.

The interrater and test-retest reliability of the ADIS are satisfactory, both at the level of individual symptoms and at the level of classifications (Silverman, 1991; Silverman & Eisen, 1992; Silverman & Rabian, 1995). All ADIS-C and ADIS-P interviews were scored twice, independently by the two interviewers of this study. The interrater reliability was good, with kappa = .89 and .90 for the child and the parent interviews respectively. In this study the ADIS-P regarding the AD child was administered to one parent (mother or father chosen randomly), and the ADIS-P regarding the sibling to the other parent.
The Child Rearing Practices Report (CRPR; Block, 1965, 1981) assesses attitudes, values, goals and behaviors of parents about child-rearing (Block, 1981). It is administered to children ranging in age from pre-school (e.g., Hastings & Rubin, 1999) to late adolescence (e.g., Gerhardt et al., 2003), and has shown stability across time (McNally, Eisenberg, & Harris, 1991; Roberts, Block, & Block, 1984). Originally the CRPR consists of 91 socialization statements in a Q-sort format. Deković and colleagues (1991) developed a questionnaire format of the CRPR, with a 6-point Likert-type scale (ranging from 1 = not at all descriptive of me, to 6 = highly descriptive of me). The questionnaire format has proven to possess good reliability as well as construct validity (Deković, Janssens, & Gerris, 1991).

Factor analysis showed two main factors Nurturance and Restrictiveness (Deković et al., 1991; Rickel & Biasatti, 1982). Some subscales of the original CRPR version, of which the items do not overlap with the two main scales, are also relevant to the investigation of parental warmth versus rejection and control versus autonomy, i.e. Negative Affect Toward Child (Cronbach’s alpha = .61), Worry About the Child (Cronbach’s alpha = .59), Encouraging Independence (Cronbach’s alpha = .69). Therefore, for the purpose of our study we used these subscales in addition to the main scales.

The EMBU (Perris et al., 1980) is a self-report questionnaire for adults' memories of their child-rearing experiences with regard to mothers and fathers separately. It was originally developed in Sweden and translated by Arrindell and colleagues (1983) into Dutch. It comprises 81 questions and two additional items concerning strictness and consistency of parental behavior. The answers are given on a 4-point Likert scale (ranging from 1 = yes, sometimes, to 4 = yes, almost always). Special versions of the EMBU have been developed for adolescents (EMBU-A; Gerlsma, Arrindell, van der Veen, & Emmelkamp, 1991) and primary school children (EMBU-C; Markus et al., 2003). The EMBU-C used in this study has proven to comprise the original 4 dimensions: Rejection, Emotional Warmth, Overprotection and Favouring Subject, and has proven to be reliable (for further detail see Markus et al., 2003).

The Five Minute Speech Sample (FMSS; Magaña et al., 1986) is a brief interview for assessing expressed emotion (EE). A reasonable association between EE ratings derived from the FMSS and the Camberwell Family Interview (CFI; Brown & Rutter, 1966; Rutter & Brown, 1966; Vaughn & Leff, 1976) has proven its value as a screening

In our study each parent was asked individually to speak about the child for five minutes and to tell how they get along together. This was asked for both children separately.

According to the FMSS coding system (Magaña et al., 1986), EE is measured along two dimensions: 1) critical comments (CC), and 2) emotional overinvolvement (EOI). Both dimensions can be scored either ‘low’ or ‘high’. Critical comments is rated high if the initial statement or the relationship is negative, or one or more criticisms (by content or tone) are expressed. Emotional overinvolvement is rated high if emotional display is expressed, overprotective or self-sacrificing behavior is reported, or any two of the following are expressed: excessive praise, excessive detail about the past, or a statement of attitude. EE is considered ‘high’ when either CC, EOI or both are scored as ‘high’ (Magaña et al., 1986).

The FMSS was audiotaped and scored by two trained raters, blind to the status of the child. The trainer (P.M.A.J.D.) had been trained by the staff of the Goldstein Family Project at UCLA. The interrater-agreement of the Dutch trainer with UCLA was .82. The interrater-agreement assessed in a subsample of 15 FMSS protocols of the present study was found to be satisfactory with 89% agreement (kappa = .67).

PROCEDURE

The study was approved by the institutional review board of Leiden University Medical Centre. Informed and written consent was obtained from all parents and children participating.

During the visit to the parent the FMSS for both children and the ADIS-P were administered. During the interview with the child (while ADIS-C and EMBU-C were administered) the parents were not present and it was emphasized that the child’s answers would not be made known to its parents.

DATA ANALYSIS

Differences between 25 AD children and 25 non-clinical control children in child-rearing styles were investigated by using repeated-measures analysis of variance, with gender of parent as the repeated factor, thus accounting for the interdependence of members of one family (referred to as between-family analysis). Differences between AD children and their siblings in reported child-rearing styles were tested by
means of a repeated-measures analysis of variance, with both child (AD versus sibling) and gender of parent as the repeated factors (referred to as within-family analysis). The findings were re-examined by conducting analysis of variance with gender and age of the child as covariates. All significant findings remained significant.

The between-family analysis of the FMSS data was carried out by means of chi-square and the within-family analysis by means of McNemar’s Test.

**Results**

For each instrument the results of between-family analyses will be described first, followed by within-family analyses. Possible differences between AD children and their siblings could be masked by the six siblings with an overanxious disorder. For this reason the data regarding these six siblings were compared with the data of the other 19 siblings. This comparison showed that the scores of the two groups of siblings were not significantly different. Therefore in the following within-family analyses we have included all siblings in one group, having in common their non-referred status.

**CRPR** Parents of AD children did not differ significantly from the parents of non-clinical control children on the two main factors of the parental self-report questionnaire: Nurturance and Restrictiveness (see table 1a, between-family analysis).

For the subscales, included for exploratory reasons, several significant differences were found both in the between-family and in the within-family comparisons. Parents in AD families reported significantly more Negative Affect Toward Child and more Worry About the Child compared to control families. Parents in AD families reported less encouragement of independence of their children than parents in non-clinical control families.

Within-family analysis showed that parental report of child-rearing between AD children and their siblings was not significantly different on Nurturance or Restrictiveness (see table 1b, within-family analysis). Within-family analyses revealed that parents reported significantly more Negative Affect and more Worry concerning AD children in comparison to the siblings of these AD children.

Overall, it was found that fathers were significantly more restrictive than mothers \(F(48,1) = 8,0; \ P = .01\).
**Table 1a.** Child-rearing-parental report (CRPR): anxiety-disordered children versus non-clinical control children

<table>
<thead>
<tr>
<th></th>
<th>AD-CHILDREN (N=25)</th>
<th>NON-CLINICAL CONTROL CHILDREN (N=25)</th>
<th>F (48.1)</th>
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<td>Mean (S.D.)</td>
<td>Mean (S.D.)</td>
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</tr>
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<td><strong>main factors</strong></td>
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<tr>
<td>nurturance</td>
<td>92.70 (6.76)</td>
<td>94.62 (6.50)</td>
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<td>restrictiveness</td>
<td>59.84 (11.58)</td>
<td>58.44 (11.88)</td>
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<td><strong>subscales</strong></td>
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<tr>
<td>negative affect</td>
<td>8.62 (3.06)</td>
<td>6.16 (2.32)</td>
<td>18.43 ***</td>
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<tr>
<td>worry about the child</td>
<td>7.80 (2.38)</td>
<td>5.40 (2.15)</td>
<td>22.59 ***</td>
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<tr>
<td>encouraging independence</td>
<td>28.96 (4.04)</td>
<td>30.61 (3.45)</td>
<td>4.16 *</td>
</tr>
</tbody>
</table>

*Note. *p<.05, ***p<.001*

**Table 1b.** Child-rearing-parental report: anxiety-disordered children versus non-referred siblings

<table>
<thead>
<tr>
<th></th>
<th>AD-CHILDREN (N=25)</th>
<th>NON-REFERRED SIBLINGS (N=25)</th>
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<tr>
<td>Mean (S.D.)</td>
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<td><strong>main factors</strong></td>
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<td>nurturance</td>
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<td>93.40 (7.47)</td>
<td>0.60</td>
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<tr>
<td>restrictiveness</td>
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<td>60.17 (12.47)</td>
<td>0.21</td>
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<td><strong>subscales</strong></td>
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<tr>
<td>negative affect</td>
<td>8.62 (3.06)</td>
<td>6.20 (2.61)</td>
<td>15.29 ***</td>
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<tr>
<td>worry about the child</td>
<td>7.80 (2.38)</td>
<td>6.98 (2.64)</td>
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<tr>
<td>encouraging independence</td>
<td>28.96 (4.04)</td>
<td>29.62 (4.17)</td>
<td>1.68</td>
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</tbody>
</table>

*Note. *p<.05, ***p<.001*

**EMBU-C** AD children reported significantly more parental Rejection compared to non-clinical control children (see table 2a). For Emotional Warmth, Overprotection and Favouring Subject no significant differences were found between children’s reports from AD families and control families.

In the within-family analysis 22 AD children were compared with their siblings respectively, due to missing data on the EMBU-C (siblings had not reached the age preferred for adequately answering the EMBU-C). Within-family analysis showed that AD children reported significantly more parental Rejection compared to their siblings, in line with previous studies. For Emotional Warmth as well as for Overprotection no significant differences were found between AD children and their siblings. In contrast to the between-family analysis on Favouring Subject, within-family analyses showed a significant difference between the children: AD children reported being favoured by their parents significantly more than their siblings.

<table>
<thead>
<tr>
<th></th>
<th>AD-CHILDREN (N=24)</th>
<th>NON-CLINICAL CONTROL CHILDREN (N=25)</th>
<th>F (47.1)</th>
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<tr>
<td>Rejection</td>
<td>1.71 (0.31)</td>
<td>1.50 (0.22)</td>
<td>8.52 **</td>
</tr>
<tr>
<td>Emotional Warmth</td>
<td>3.10 (0.49)</td>
<td>3.27 (0.50)</td>
<td>1.49</td>
</tr>
<tr>
<td>Overprotection</td>
<td>1.85 (0.46)</td>
<td>1.89 (0.33)</td>
<td>0.12</td>
</tr>
<tr>
<td>Favouring Subject</td>
<td>1.79 (0.51)</td>
<td>1.60 (0.38)</td>
<td>2.73</td>
</tr>
</tbody>
</table>

Note. **p<.01

Table 2b. Child-rearing-child report (EMBU-C): anxiety-disordered children versus non-referred siblings

<table>
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<tr>
<th></th>
<th>AD-CHILDREN (N=22)</th>
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<tr>
<td>Rejection</td>
<td>1.70 (0.31)</td>
<td>1.57 (0.22)</td>
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<td>Emotional Warmth</td>
<td>3.08 (0.50)</td>
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<tr>
<td>Overprotection</td>
<td>1.82 (0.46)</td>
<td>1.71 (0.29)</td>
<td>0.97</td>
</tr>
<tr>
<td>Favouring Subject</td>
<td>1.80 (0.53)</td>
<td>1.52 (0.41)</td>
<td>6.8 *</td>
</tr>
</tbody>
</table>

Note. *p<.05

Overall, parental status revealed a significant difference for Emotional Warmth \[F(47.1) = 7.0; P = .01\] as well as for Overprotection \[F(47.1) = 9.4, P = .01\]: children rated their mothers as being warmer and more overprotective than their fathers.

**FMSS** Between-family analysis showed that high-expressed emotion (high-EE) was scored significantly more often in families with an AD child than in non-clinical control families (see table 3a).

Analysis of the separate sub-scales of CC and EOI revealed that high-CC was more common among parents of AD children than those of non-clinical control children. For emotional overinvolvement no significant difference was found between the two groups (see table 3a). These results for the subscales showed that the difference found for EE-status is accounted for almost entirely by the significant difference in high-critical comments (high-CC).

Within-family analysis revealed that high-EE was scored significantly more often regarding AD children than regarding their siblings (see table 3b). Parents tended to express more high-CC toward AD children than toward their siblings. There was no significant difference in EOI between AD children and their siblings. These results showed that the affective climate as measured by the FMSS was more characteristic of the relation
between the parents and each individual child than it was characteristic of the family itself.

McNemar’s Test of parental status revealed a trend for EE-status \( (P = .08) \). High-EE was expressed more often by mothers than by fathers.

**Table 3a.** Child-rearing-interview based (FMSS): parental EE ratings for anxiety-disordered and non-clinical control children

<table>
<thead>
<tr>
<th></th>
<th>AD-CHILDREN ( (N=25) )</th>
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<td>n</td>
<td>%</td>
<td>N</td>
<td></td>
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<tr>
<td>high EE</td>
<td>16</td>
<td>4</td>
<td>10.1 **</td>
</tr>
<tr>
<td>high CC</td>
<td>14</td>
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<td>7.03 **</td>
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<tr>
<td>high EOI</td>
<td>2</td>
<td>0</td>
<td>0.52</td>
</tr>
</tbody>
</table>

**Note.** **p<0.01**

**Table 3b.** Child-rearing-interview based (FMSS): parental EE ratings for anxiety-disordered and non-referred siblings

<table>
<thead>
<tr>
<th></th>
<th>AD-CHILDREN ( (N=25) )</th>
<th>NON-REFERRED SIBLINGS ( (N=25) )</th>
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<tbody>
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<td>n</td>
<td>%</td>
<td>N</td>
<td>P</td>
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<td>high EE</td>
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<tr>
<td>high CC</td>
<td>14</td>
<td>6</td>
<td>.057</td>
</tr>
<tr>
<td>high EOI</td>
<td>2</td>
<td>0</td>
<td>.50</td>
</tr>
</tbody>
</table>

**Discussion**

The results of this study underscore the correlation between parental rearing style and anxiety disorders in children. This is a powerful finding: evidence was found through different parallel methods, examination of both parents and children separately.

Parents of AD children report more Negative Affect Towards their AD child, AD children perceive their parents to be more rejecting, and the expressed emotion measure shows parents of AD children to actually express more criticism toward their AD child as compared to their no-affected siblings. Thus, for parental rejection, the findings from all informants converge.

The child report showed no difference between AD children and controls on perceived Overprotection (usually regarded as a form of control), and parents of AD children did not show more expressed emotion in the form of emotional overinvolvement than parents of controls. Parent report showed no difference between rearing of AD children and that of controls on the main dimension Restrictiveness, but there was a difference on the CRPR subscale Encouraging Independence. Parents of AD children are less inclined to do so, than parents of...
controls. Interestingly, this difference on the control dimension is not restricted to the AD child but regards the non-referred sibling as well.

How are we to understand these findings? The restriction of parental Negative Affect/Criticism to the AD child (in contrast to its sibling) could reflect a scapegoat-phenomenon, where the child that is treated more harshly than its siblings is more at risk of developing an anxiety disorder. But another explanation is possible as well. Anxious children are more likely to seek the proximity and/or the attention of a parent by crying or yelling (e.g., Marks, 1987). This clinging behavior might provoke irritation in parents (Bögels & Brechman-Toussaint, 2006). A higher level of criticism in parents of problematic children is found for other forms of psychopathology as well (e.g., Asarnow, Goldstein, Tompson, & Guthrie, 1993: depression; Stubbe et al., 1993; Vostanis & Nicholls, 1995; Vostanis et al., 1994: conduct disorder). In the expressed emotion literature this is usually understood as a form of parental coping with the child’s psychopathology (Schreiber, Breier, & Pickar, 1995). This might also explain why especially mothers were found to score high on expressed emotion. In our sample mothers were more involved in the daily care of the children, and therefore confronted more frequently with the anxiety of the child and its consequent behavior.

Our findings regarding the control-dimension are not restricted to the AD child, as was also found in the study by Hudson and Rapee (2002). Here we may witness a combination of a parental inclination to worry and (psychological) control on the one hand, and a parental response to the child’s anxiety on the other (Rapee, 2001). Parental control may deprive children of opportunities to develop coping skills and as a result create a psychological vulnerability to anxiety (Chorpita & Barlow, 1998). However, once children have developed an anxiety disorder they will in return call on the parent to intervene for them (Barber, 1994). Of course, a longitudinal design would be most appropriate to determine the temporal relationship between perceived child-rearing practices and the presence of an anxiety disorder in children.

In contrast to Stubbe and colleagues (1993) this study did not show differences between parents of AD children and controls on EOI. Our findings concur with most studies concerning EE towards children, in which EOI rates are generally low (Wearden et al., 2000). It has already been suggested that the criteria for rating emotional overinvolvement need to be adjusted, as they are based on behavior that is judged inappropriate toward adult children but considered appropriate towards younger children (Vostanis et al., 1994).
The present finding that AD children report being favoured by their parents above their siblings seems to be conflicting with our previous finding (Lindhout et al., 2003) that AD children perceived more unjustified parental differential treatment than non-clinical children. However, the concurrent reporting by the AD child of being favoured above a sibling, but also of the sibling being favoured above the AD child itself, has been found before and shows the two-sided nature of perceived parental partiality (Boer, 1990). Apparently AD children show a heightened sensitivity for differential parenting (Lindhout et al., 2003), which can go in either direction.

It is a strength of this study that it investigated current parent practices, rather than parenting assessed in retrospect, thereby diminishing a possible recall bias. Furthermore this study extends the findings of an earlier study on anxiety disorders and current parenting in families with primary school age children (Siqueland et al., 1996) by including non-referred siblings. This enabled us to distinguish shared from non-shared parenting experiences and unravel parent and child contributions to some extent.

There are limitations to this study as well. First of all, the sample size is rather small, which may have obscured possible differences. Additionally, we did not add a psychiatric control group. Therefore we are not able to differentiate between results specific for anxiety disorders and results due to psychopathology in general. This differentiation may be important, as one study found parents of AD as well as oppositional defiant children to be overinvolved (Hudson & Rapee, 2001). We also need to consider that our sample included some children with comorbid depression. This may have limited the specificity of the findings for pure anxiety disorders.

Future research may benefit from the inclusion of child characteristics (e.g., temperament) and parental characteristics (e.g., psychopathology) to further investigate factors contributing to parental rearing practices (see also Hudson & Rapee, 2001).

**Clinical implications**

This study allows clinicians to educate parents about the consequences of having an AD child. When it is explained that parental criticism may be a way of coping with the problematic behavior of the child, parents will feel supported rather than blamed, and will be more motivated to find other ways of expressing their concerns. Furthermore, it will be helpful for parents of anxious children to realize how their
inclination to control is partially provoked by the anxiety of their child. The child’s anxiety disorder can elicit an increase in parental control, which may be reinforced further when the parent is inclined to a controlling rearing style. Knowledge about the child’s contribution can be helpful in differentiating between parenting elicited by the child’s characteristics and parenting dictated by the parent’s own inclination to control. By making this distinction, a parent will be better able to help the child in overcoming its anxiety.

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