The relationship between anxious rearing behaviours and anxiety disorders symptomatology in normal children

Kerstin Grüner, Peter Muris*, Harald Merckelbach

Department of Psychology, Maastricht University, P.O. Box 616, 6200 MD Maastricht, The Netherlands

Abstract

The present study examined the relationship between perceived parental rearing practices, in particular anxious rearing behaviours, and anxiety symptoms. One-hundred and seventeen school children aged between 9 and 12 years completed the EMBU for children, a questionnaire that measures perceptions of parental rearing behaviours, and the Children's Anxiety Scale, an index of DSM-defined anxiety disorders symptoms. Results showed that there were significant and positive associations between Parental Rejection, Anxious Rearing, and Parental Control, on the one hand, and anxiety symptoms, on the other hand Emotional Warmth was not related to anxiety symptoms. © 1999 Elsevier Science Ltd. All rights reserved.

Keywords: Parental rearing; Anxious rearing; Anxiety symptoms; Children

For a long time, anxiety disorders in children have been regarded as a different type of psychopathology than anxiety disorders in adults. But after the publication of the latest edition of the Diagnostic and Statistical Manual of Mental Disorders (i.e., the DSM-IV; American Psychiatric Association, 1994), this state of affairs has changed. With the exception of separation anxiety, all childhood anxiety disorders are subsumed under the adult disorders. Spence (1997) reports evidence that this procedure can be justified. In a factor analytic study, this author found that anxiety symptoms in normal children can be clustered into subtypes of anxiety problems that are consistent with the classification of anxiety disorders as proposed by the DSM-IV. In other
words, there seems to be a continuum between normal anxiety symptoms and clinical manifestations of anxiety.

Several epidemiological studies have pointed out that the prevalence rates of anxiety disorders in nonreferred children are relatively high (Anderson, Williams, McGee, & Silva, 1987; Bell-Dolan, Last, & Strauss, 1990). In this light, it seems important to examine which variables put the child at risk for developing high levels of anxiety or even anxiety disorders. In general, three hypotheses are offered (see for reviews, Bernstein, Borchardt, & Perwien, 1996; Craske, 1997). The first one is biological in nature and focuses on the genetically transmitted temperament that predisposes children to develop fears and anxiety. The second hypothesis emphasizes that certain parental rearing behaviours and/or specific patterns of attachment would generate high levels of anxiety in children. A third hypothesis combines these two notions and stresses the interaction between genetic and environmental factors.

A considerable number of studies have provided evidence for the role of parental rearing in the development of anxiety disorders (see for a review, Rapee, 1997). Most of these studies are conducted with adult populations. For example, Arrindell, Emmelkamp, Monsma, and Brilman (1983) asked anxiety disordered patients and normal controls to retrospectively judge the rearing practices of their parents. Results indicated that anxiety disordered patients reported their parents to be more rejective and controlling, and less emotional warm. Likewise, Silove, Parker, Hadzi-Pavlovic, Manicavasagar, and Blaszczynski (1991) found that anxious patients reported that their parents were less caring and more overprotective than did normal controls.

So far, only a few studies have dealt with the relationship between perceived parental rearing practices and anxiety in children. While Muris, Bögels, Meesters, Van der Kamp, and Van Oosten (1996a) did not find significant associations between parental rearing practices and fearfulness in a small clinical sample, Barling, MacEwen, and Nolte (1993) pointed out that rejecting behaviour from the mother was related to internalizing/anxious behaviour in the child. Interestingly, a study investigating the contribution of parental modeling to fearfulness of children (Muris, Steerneman, Merckelbach, & Meesters, 1996b) showed that trait anxiety in children was positively associated with trait anxiety of both the mother and the father. Furthermore, children of mothers who reported that they never expressed their fears in the presence of their children showed the lowest anxiety scores, whereas children with mothers who frequently expressed their fears in the presence of their child exhibited the highest scores. The latter finding suggests that besides the more traditional parental rearing styles such as rejection and overprotection, an anxious attitude of parents may contribute to anxiety levels of children.

The present study aims at exploring the relationship between perceived parental rearing practices, in particular anxious rearing behaviours, and anxiety disorders symptomatology. More than 100 normal school children completed (1) a modified version of the EMBU (Swedish acronym for My memories of upbringing) for children (EMBU-C; Castro, Toro, Van der Ende, & Arrindell, 1993), a questionnaire
measuring perceptions of parental rearing practices such as rejection, overprotection, emotional warmth, and, most pertinent to the current article, anxious rearing, and (2) the Children’s Anxiety Scale (CAS; Spence, 1997), an index of DSM-IV defined anxiety disorders symptomatology.

1. Method

1.1. Subjects

One-hundred and twenty-one school children between 9 and 12 years attending two primary schools in Kerkrade, The Netherlands, participated in the present study. The surveys of 4 children had to be disregarded due to missing data, leaving 117 children (57 boys and 60 girls) in the final sample. The mean age of the children was 10.40 years (SD = 0.93).

1.2. Measures

The EMBU-C originally is a 41-item questionnaire measuring four dimensions of parental rearing: Emotional Warmth (e.g., “Your parents not only tell you that they love you but they also hug and kiss you”), Rejection (e.g., “Your parents wish that you were like somebody else”), Overprotection (e.g., “Your parents want you to reveal all your secrets to them”), and Favouring Subject (e.g., “Your parents favour you in relation to your brothers and sisters”). For the purpose of the present study, the EMBU-C was modified in three ways. First of all, all items referring to children’s brothers and sisters (i.e., the Favouring Subject subscale and two additional items) were removed because not all children had brothers and sisters (see also Muris, Bosma, Meesters, & Schouten, 1998). Second, and most importantly, new items were created in an attempt to measure children’s perception of anxious parental rearing behaviours (see appendix). Finally, for each dimension, the number of items was reduced to 10. As a result, the modified EMBU-C consisted of 40 items that can be allocated to four types of parental rearing: Emotional Warmth, Rejection, Overprotection, and Anxious Rearing. Each item had to be answered on a 4-point Likert-scale (1 = No, never, 2 = Yes, but seldom, 3 = Yes, often, 4 = Yes, most of the time). For each EMBU-C item, children first assessed father’s rearing behaviour and then mother’s rearing behaviour.

The Dutch translation of the CAS is a 41-item self-report inventory measuring symptoms of anxiety disorders that, according to the DSM-IV, may occur in children, i.e., Generalized Anxiety Disorder, Separation Anxiety Disorder, Social Phobia, Obsessive–Compulsive Disorder, Panic Disorder and Agoraphobia, and Physical Injury Fears (replacing specific phobias). CAS items have to be answered on a 4-point scale with 1 = No, never, 2 = Yes, but seldom, 3 = Yes, often, 4 = Yes, most of the time.
2. Results

2.1. Reliability of the EMBU-C

The reliability analysis of the EMBU-C scales resulted in Cronbach’s alphas ranging from 0.62 to 0.80 with an average alpha of 0.72. The Emotional Warmth and the new Anxious Rearing scales turned out to be the most reliable scales for both mothers and fathers in terms of internal consistency (all alphas > 0.74). Intercorrelations between the scales were moderate indicating that EMBU-C scales tap different dimensions of parental rearing behaviours.

In passing, it should be noted that factor analysis (principal components with OBLIMIN rotation) provided some support for the 4-factor structure of the modified EMBU-C. In particular, the factor analysis of the EMBU-C data of mothers revealed a solution in which items loaded convincingly on their supposed factors. The analysis of the EMBU-C data of the fathers revealed a less clear-cut picture. Note, however, that the sample size of the present study was rather small for the purpose of factor analysis.

2.2. Reliability analysis of the CAS

The reliability analysis of the CAS revealed Cronbach’s alpha coefficients between 0.58 (Social Phobia) and 0.93 (Total Anxiety) with an average alpha of 0.73. Intercorrelations between the CAS scales were highest when the Generalized Anxiety Disorder scale was involved (with \( r > 0.53 \)).

2.3. Age and gender effects

In order to detect possible age effects, Pearson product-moment correlations were calculated between age, on the one hand, and EMBU-C and CAS scales, on the other hand. Results showed small, negative relationships between age and Parental Control of the father (\( r = -0.21; P < 0.05 \)), and between age and Separation Anxiety Disorder (\( r = -0.23; P < 0.05 \)). Thus, Parental Control by the father as well as symptoms of separation anxiety were found to decrease with age.

Possible gender effects were examined by \( t \)-tests. No gender effects were found for the EMBU-C, but some differences emerged with regard to the CAS: Total Anxiety (\( t = -2.30; df = 115; P < 0.05 \)), Separation Anxiety Disorder (\( t = -2.30; df = 115; P < 0.05 \)) and Social Phobia (\( t = -2.80; df = 115; P < 0.01 \)). In all of these cases, girls reported higher anxiety scores than boys.

2.4. Relationships between perceived parental rearing practices and anxiety symptoms

In order to analyse the relationships between perceived parental rearing practices and anxiety symptoms, Pearson product-moment correlations were calculated while controlling for age and gender (see Table 1).
Table 1
Product-moment correlations (while controlling for age and gender) between EMBU-C and CAS \((N = 117)\)

<table>
<thead>
<tr>
<th></th>
<th>Total Anxiety</th>
<th>Generalized Anxiety</th>
<th>Separation Anxiety</th>
<th>Social Phobia</th>
<th>Panic Attack/ Agoraphobia</th>
<th>Physical Injury Fears</th>
<th>Obsessive Compulsive Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Warmth (Mother)</td>
<td>-0.13</td>
<td>-0.16</td>
<td>-0.01</td>
<td>-0.08</td>
<td>-0.13</td>
<td>-0.10</td>
<td>-0.16</td>
</tr>
<tr>
<td>Emotional Warmth (Father)</td>
<td>-0.03</td>
<td>0.00</td>
<td>0.08</td>
<td>-0.07</td>
<td>-0.03</td>
<td>0.00</td>
<td>-0.11</td>
</tr>
<tr>
<td>Parental Control (Mother)</td>
<td>0.30**</td>
<td>0.29**</td>
<td>0.20*</td>
<td>0.27**</td>
<td>0.17</td>
<td>0.27**</td>
<td>0.25**</td>
</tr>
<tr>
<td>Parental Control (Father)</td>
<td>0.28**</td>
<td>0.24**</td>
<td>0.22*</td>
<td>0.26**</td>
<td>0.19*</td>
<td>0.26**</td>
<td>0.23*</td>
</tr>
<tr>
<td>Anxious Rearing (Mother)</td>
<td>0.30**</td>
<td>0.24**</td>
<td>0.26**</td>
<td>0.29**</td>
<td>0.20*</td>
<td>0.26**</td>
<td>0.26**</td>
</tr>
<tr>
<td>Anxious Rearing (Father)</td>
<td>0.29**</td>
<td>0.24*</td>
<td>0.31**</td>
<td>0.20*</td>
<td>0.25**</td>
<td>0.21*</td>
<td>0.24*</td>
</tr>
<tr>
<td>Parental Rejection (Mother)</td>
<td>0.42****</td>
<td>0.37***</td>
<td>0.33***</td>
<td>0.31**</td>
<td>0.36***</td>
<td>0.30**</td>
<td>0.41***</td>
</tr>
<tr>
<td>Parental Rejection (Father)</td>
<td>0.38****</td>
<td>0.30**</td>
<td>0.31**</td>
<td>0.32***</td>
<td>0.29**</td>
<td>0.25**</td>
<td>0.39***</td>
</tr>
</tbody>
</table>

*Note.* *P* < 0.05, **P* < 0.01, ***P* < 0.001.
Table 2
Main results of the series of forward regression analyses with EMBU-C scales being the predictors and CAS scales being the dependent variables (sex and age being controlled)

<table>
<thead>
<tr>
<th>CAS scales (Dependent)</th>
<th>EMBU-C scales (Mother -)</th>
<th>Partial r</th>
<th>P</th>
<th>R square change</th>
<th>EMBU-C scales (Father -)</th>
<th>Partial r</th>
<th>P</th>
<th>R square change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Anxiety</td>
<td>1. Parental Rejection</td>
<td>0.42</td>
<td>&lt; 0.001</td>
<td>17.1%</td>
<td>1. Parental Rejection</td>
<td>0.38</td>
<td>&lt; 0.001</td>
<td>13.6%</td>
</tr>
<tr>
<td></td>
<td>2. Anxious Rearing</td>
<td>0.31</td>
<td>&lt; 0.01</td>
<td>7.7%</td>
<td>2. Anxious Rearing</td>
<td>0.35</td>
<td>&lt; 0.001</td>
<td>9.8%</td>
</tr>
<tr>
<td>Generalized Anxiety</td>
<td>1. Parental Rejection</td>
<td>0.37</td>
<td>&lt; 0.001</td>
<td>13.0%</td>
<td>1. Parental Rejection</td>
<td>0.30</td>
<td>&lt; 0.01</td>
<td>8.6%</td>
</tr>
<tr>
<td></td>
<td>2. Parental Control</td>
<td>0.27</td>
<td>&lt; 0.01</td>
<td>6.1%</td>
<td>2. Anxious Rearing</td>
<td>0.27</td>
<td>&lt; 0.01</td>
<td>6.6%</td>
</tr>
<tr>
<td>Separation Anxiety</td>
<td>1. Parental Rejection</td>
<td>0.33</td>
<td>&lt; 0.001</td>
<td>9.7%</td>
<td>1. Parental Rejection</td>
<td>0.31</td>
<td>&lt; 0.01</td>
<td>8.9%</td>
</tr>
<tr>
<td></td>
<td>2. Anxious Rearing</td>
<td>0.26</td>
<td>&lt; 0.01</td>
<td>5.8%</td>
<td>2. Anxious Rearing</td>
<td>0.35</td>
<td>&lt; 0.001</td>
<td>9.9%</td>
</tr>
<tr>
<td>Social Phobia</td>
<td>1. Parental Rejection</td>
<td>0.31</td>
<td>&lt; 0.01</td>
<td>8.7%</td>
<td>1. Parental Rejection</td>
<td>0.32</td>
<td>&lt; 0.01</td>
<td>9.4%</td>
</tr>
<tr>
<td></td>
<td>2. Anxious Rearing</td>
<td>0.29</td>
<td>&lt; 0.01</td>
<td>8.7%</td>
<td>2. Parental Control</td>
<td>0.24</td>
<td>&lt; 0.05</td>
<td>4.8%</td>
</tr>
<tr>
<td>Panic Attack and</td>
<td>1. Parental Rejection</td>
<td>0.36</td>
<td>&lt; 0.001</td>
<td>12.3%</td>
<td>1. Parental Rejection</td>
<td>0.29</td>
<td>&lt; 0.01</td>
<td>8.2%</td>
</tr>
<tr>
<td>Agoraphobia</td>
<td>2. Anxious Rearing</td>
<td>0.20</td>
<td>&lt; 0.05</td>
<td>3.2%</td>
<td>2. Anxious Rearing</td>
<td>0.28</td>
<td>&lt; 0.01</td>
<td>6.7%</td>
</tr>
<tr>
<td>Physical Injury Fears</td>
<td>1. Parental Rejection</td>
<td>0.30</td>
<td>&lt; 0.01</td>
<td>8.4%</td>
<td>1. Parental Control</td>
<td>0.26</td>
<td>&lt; 0.01</td>
<td>6.7%</td>
</tr>
<tr>
<td></td>
<td>2. Anxious Rearing</td>
<td>0.26</td>
<td>&lt; 0.01</td>
<td>6.1%</td>
<td>2. Parental Rejection</td>
<td>0.24</td>
<td>&lt; 0.05</td>
<td>5.0%</td>
</tr>
<tr>
<td>Obsessive–Compulsive</td>
<td>1. Parental Rejection</td>
<td>0.41</td>
<td>&lt; 0.001</td>
<td>16.8%</td>
<td>1. Parental Rejection</td>
<td>0.39</td>
<td>&lt; 0.001</td>
<td>14.9%</td>
</tr>
<tr>
<td>Disorder</td>
<td>2. Anxious Rearing</td>
<td>0.26</td>
<td>&lt; 0.01</td>
<td>5.7%</td>
<td>2. Anxious Rearing</td>
<td>0.29</td>
<td>&lt; 0.01</td>
<td>7.2%</td>
</tr>
</tbody>
</table>
With regard to these results, three important conclusions can be drawn. First, Emotional Warmth was found to be unrelated to anxiety symptoms. Second, the relatively strongest relationships emerged between Parental Rejection and CAS scores: all partial $r > 0.25$ ($P < 0.05$). In particular, Total Anxiety and Obsessive–Compulsive Disorder were strongly connected to Perceived Rejection of both the mother and the father (partial $r$s ranging between 0.38 and 0.42). Third, the two remaining EMBU-C scales, Parental Control and Anxious Rearing, were also positively related to the CAS anxiety scales.

In order to examine the connection between perceived parental rearing behaviour and anxiety symptoms in more detail, a series of stepwise regression analyses was carried out. In these analyses, EMBU-C scales were the predictors, while the CAS scales served as the dependent variables. To control for age and gender effects, these variables were forced into the equations on step 1.

As can be seen from Table 2, Parental Rejection appeared to be the most important predictor of the various anxiety symptoms. Furthermore, the regression analyses showed that Anxious Rearing also contributed significantly to the variance of anxiety symptoms. Parental Control entered in only three of the equations, whereas Emotional Warmth – consistent with the results from the correlational analyses – seemed to be of no importance in predicting anxiety symptoms in children.

3. Discussion

The present study investigated the relationships between perceived parental rearing practices and anxiety symptoms in a group of normal school children. The results of this study can be summarized as follows. First of all, Parental Rejection turned out to be the strongest predictor of anxiety symptoms in children. Second, Anxious Rearing and, to a lesser degree, Parental Control were also found to declare a significant proportion of the variance of children’s anxiety symptoms. Third, Emotional Warmth was not related to anxiety symptoms.

These findings are well in line with those of previous studies in clinical adult samples. As mentioned in the introduction, these studies have demonstrated with little exception that anxious patients perceive their parents as more rejecting and controlling than do nonclinical subjects. Most interestingly, the present study showed that anxious parental rearing behaviours are positively linked to childhood anxiety symptoms. This result fits well with the observation of Barrett, Rapee, Dadds, and Ryan (1996) that anxious rearing promotes anxious cognitions and avoidance behaviours in children.

The current results deviate from those of Muris and colleagues (1996a) who did not find associations between parental rearing practices and children’s fearfulness. How can these conflicting results be explained? It is important to note that the Muris et al. (1996a) study was different in two respects. First of all, whereas the present study relied on a sample of normal children, the Muris et al. study examined a sample of clinically referred children who suffered from diverse psychopathological symptoms (i.e., only 14 children had an anxiety disorder). Second, the Muris et al.
study employed the Fear Survey Schedule for Children to assess children’s levels of anxiety. Several authors have pointed out that this instrument is less suitable as an anxiety measure (Perrin & Last, 1992; Stallings & March, 1995). The CAS probably is a better index of childhood anxiety. Clearly, then, future studies concerned with the relationship between perceived parental rearing behaviours and anxiety symptomatology should preferably include nonclinical as well as clinical samples and should employ a broad range of childhood anxiety measures.

Several limitations of the present study should be noted. First of all, the study solely relied on self-report indices. It is possible that the younger children in the present sample had difficulties in reporting on complex constructs such as parental rearing styles and anxiety symptoms. Second, it must not be forgotten that the present study was correlational in nature and hence does not provide evidence for any kind of causal association. Thus, the only thing that can be concluded is that there are positive connections between certain parental rearing practices and anxiety symptoms. Finally, a limitation of the present study is that while examining anxiety symptoms in children only parental rearing styles were taken into consideration whereas genetic determinants were neglected. Nevertheless, there might be an interaction between temperamental factors of the child, parental rearing styles, and the development of anxiety (see Craske, 1997).

In conclusion, then, the present study suggest that parental rearing behaviours, in particular Rejection and Anxious Rearing, are involved in the development of anxiety symptoms in children.

Appendix

Items of Anxious Rearing scale of the EMBU-C

Your parents worry about what you are doing after school.
Your parents are afraid that something might happen to you.
Your parents worry about you getting into trouble.
Your parents worry about you doing dangerous things.
Your parents worry about you making a mistake.
Your parents are afraid when you do something on your own.
Your parents are anxious people and therefore you are not allowed to do as many things as other children.
Your parents warn you against all possible dangers.
Your parents are worried when they do not know what you are doing.
Your parents want to prevent you from all possible dangers.

References


